The Virtual High School
AP® Summer Work Assignments
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Welcome to AP Art History! If you take this course seriously, it will literally change the way you see the world. You will see elements of art, buildings, culture and media in ways you totally overlooked in the past.

Objective
Get your art historian feet wet with the critical assessment of an art history bestseller or popular movie.

Select one of the options listed below and write a review of your choice.

Requirements
1. If appropriate to the source you selected, choose one artwork from your book or movie of choice that you feel is central. Focus your review on the central artwork.
2. With any work you choose, identify the work: title, artist, date of creation (time in which work was created), media (materials from which work was created).
3. If the book or movie is more generally about a period of art, then research that period. Identify a major artist from that period and answer the three questions.
4. Assessment should be a minimum of 300 words and must thoroughly answer the questions below.
5. Your paper must include your name, the date and the name of the book or movie are you reviewing at the top.
6. You must cite any online resources you used.
7. Your work must be submitted in as a word doc., rtf or pdf file.
8. See note below about R rated movies.
9. The summer assignment is due at the end of Week 3.

Answer the following questions in your assessment:
1. Why is this work or artist important in art history? Include interesting, memorable, or intriguing facts that you’ve discovered.
2. Did the times when the work (or works) was created influence the work? Explain with specific details.
3. Did the creation of the work influence the time and when it was created? Include specific examples.

Books to choose from:
The Monuments Men, Allied Heroes, Nazi Thieves, and the Greatest Treasure Hunt in History by Robert M. Edsel
Michelangelo and the Pope’s Ceiling by Ross King
Brunelleschi’s Dome by Ross King
Leonardo and the Last Supper by Ross King
The Girl with a Pearl Earring by Tracy Chevalier
The Pillars of the Earth by Ken Follet
The Lost Painting: The Quest for a Caravaggio Masterpiece by Jonathan Harr
Girl in Hyacinth Blue by Susan Vreeland
Luncheon of the Boating Party by Susan Vreeland
The Passion of Artemesia by Susan Vreeland
The Virgin Blue by Tracy Chevalier
The Lady and the Unicorn by Tracy Chevalier
The Birth of Venus by Sarah Dunant
The Painter from Shanghai by Jennifer Cody Epstein
I, Juan de Pareja by Elizabeth Burton de Treviño
The Agony and the Ecstasy by Irving Stone
Girl Reading by Katie Ward

Page Break

Movies to choose from:

Tim’s Vermeer
Camille Claudel
Bride of the Wind
Frida
Goya’s Ghost
Mr. Turner
Basquiat
The Girl with a Pearl Earring
Exit Through the Gift Shop
Rivers and Tides
Pollack
Artemesia
Moulin Rouge
Children of Men
Fur: An imaginary portrait of Diane Arbus
Goya in Bordeaux
I Shot Andy Warhol
Lust for Life
The Mystery of Picasso
Vincent and Theo
*If you choose a movie that is rated “R” you must submit a signed permission slip (see below) from a parent or guardian to get credit.

This permission slip can be e-mailed or faxed to the student’s teacher during the first week of class.

Dear Parent:
Your son/daughter is a student for the AP Art History course. S/he has chosen to watch an R rated movie as part of the APAH Summer Assignment. The purposes of this lesson include:
1. Investigating an important artist or period of art.
2. Investigate the political, social and religious influences on an artist or period of art.
3. Assume the role of an art historian and write a critical assessment of a popular movie

Please sign below and tell him/her to return this document to the SC (site coordinator) at school.

____________________________________
Student’s name-printed

____________________________________
Parent’s name-printed

____________________________________
Parent’s signature

____________________
Date
AP® Biology

AP Biology Scavenger Hunt

Overview: As a preview to this course, you will be conducting a scavenger hunt of the biological world. Some of these concepts should be familiar from your introductory biology course; for those that are unfamiliar, you will need to do a bit of research.

Assignment:
- For each of the concepts below, provide one example.
  - Explain your example
  - Reference any articles, internet or other resources that you use
  - Label all examples with the appropriate number.
- Provide a picture to support 10 of your examples- you’ll need at least 10 pictures.
  - Pictures should be directly referenced and in small files such as .jpegs.
- You may submit your work as a Word or Powerpoint file (or Google docs).
- You will submit your assignment within the first two weeks of class. Keep in mind that this assignment should be done over the summer, as you will have plenty of work to do once class starts!

1. property of water necessary for life
2. isotope used for radioactive dating
3. carbohydrate used as a sugar substitute
4. area of the body with a pH less than 7
5. protein with quarternary structure
6. organelle with its own genome
7. protein pump
8. cellular work
9. enzyme necessary for digestion
10. CAM plant
11. electron carrier in cellular respiration
12. mutation that leads to a disease
13. polygenic trait in humans
14. post-transcriptional modification
15. molecular evidence for evolution
16. contributor to theory of evolution
17. microevolution
18. macroevolution in a short period of time
19. connective tissue
20. organism that reproduces via alternation of generations
21. hormone involved in osmoregulation
22. an example of an annelid that is a parasite
23. animal without nerve or muscle tissue
24. keystone predator
25. primary succession
26. organism crucial to Nitrogen cycle
27. inverted biomass pyramid
28. A Homeostatic mechanism involving 2 or more body systems
29. current (within the last 3 months) article about biotechnology
30. current (within the last 3 months) article about an ecological issue in your state

Enjoy your journey into biology…and have a great summer!
AP® Calculus AB/BC

This summer assignment is intended to be an independent assignment to review the prerequisite topics that are needed for AP® Calculus. This assignment will also be a useful guide to refer to topics within algebra, geometry, trigonometry and function analysis. In the first section, you will see a list of prerequisite topics as well as resources where you can review these specific topics. In the following sections, you will complete a table on families of functions as well as complete some problems.

I. Prerequisite Topics

**Directions:** Review the table of prerequisite topics. Resources have been provided for each topic if any review or explanation is necessary. This table of topics and resources serves as an excellent primer to the AP® Calculus courses.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equation of a line</td>
<td>Linear Equations in Slope-Intercept Form</td>
</tr>
<tr>
<td></td>
<td>Linear Equations in Point-Slope Form</td>
</tr>
<tr>
<td></td>
<td>Linear Equations in Standard Form</td>
</tr>
<tr>
<td>Rational expressions</td>
<td>Simplify Rational Expressions</td>
</tr>
<tr>
<td>Functions: domain/range</td>
<td>Determine Domain of a Function</td>
</tr>
<tr>
<td>Functions: compositions</td>
<td>Find Composite Functions</td>
</tr>
<tr>
<td>Functions: inverses</td>
<td>Introduction to Inverse Functions</td>
</tr>
<tr>
<td>---------------------</td>
<td>-----------------------------------</td>
</tr>
</tbody>
</table>

## Geometry

<table>
<thead>
<tr>
<th>Topic</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area Formulas</td>
<td>Area Formulas</td>
</tr>
<tr>
<td>Volume and Surface Area Formulas</td>
<td>Chart of Volume and Surface Area of a Sphere, Cube, Rectangular Solid and Cone</td>
</tr>
<tr>
<td>Similar Triangles</td>
<td>Similar Triangles</td>
</tr>
</tbody>
</table>

## Trigonometry

<table>
<thead>
<tr>
<th>Topic</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sum and Difference Formulas</td>
<td>Using Sum and Difference Formulas</td>
</tr>
<tr>
<td>Double-Angle Formulas</td>
<td>Using Double-Angle Formulas</td>
</tr>
<tr>
<td>Trigonometric Identities</td>
<td>Pythagorean Identities</td>
</tr>
<tr>
<td></td>
<td>Reciprocal and Quotient Identities</td>
</tr>
</tbody>
</table>
### Unit Circle
- Special Points on the Unit Circle
- Unit Circle Generating Trigonometric Graphs

### Trigonometric Graphs
- Graphs of Sine and Cosine
- Graphs of Tangent and Reciprocal Functions

### Polar Coordinates
- Basic Graphing

### Functions

<table>
<thead>
<tr>
<th>Topic</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linear Functions</td>
<td>Math Is Fun: Linear Equations</td>
</tr>
<tr>
<td>Polynomial Functions</td>
<td>Math Is Fun: Polynomial Functions</td>
</tr>
<tr>
<td>Rational Functions</td>
<td>Asymptotes of Rational Functions</td>
</tr>
<tr>
<td>Exponential Functions</td>
<td>Exponential Function and Its Graph</td>
</tr>
<tr>
<td>Logarithmic Functions</td>
<td>Logarithmic Functions and Its Graph</td>
</tr>
<tr>
<td>Trigonometric Functions</td>
<td>Math Is Fun: Trigonometric Functions</td>
</tr>
<tr>
<td>Inverse Trigonometric Functions</td>
<td>Inverse Trigonometric Functions and Their Graphs</td>
</tr>
<tr>
<td>Piecewise Functions</td>
<td>Piecewise Functions and Their Graphs</td>
</tr>
<tr>
<td></td>
<td>Absolute Value Function as a Piecewise Defined Function</td>
</tr>
</tbody>
</table>
II. Table of Parent Functions

**Directions:** The table below represents a list of parent functions you are expected to know prior to enrolling in AP® Calculus. Complete the table by identifying the important features of each of these parent functions.

<table>
<thead>
<tr>
<th>Parent Function</th>
<th>Domain</th>
<th>Range</th>
<th>Sketch of Graph</th>
<th>X- and Y-Intercepts</th>
<th>Asymptotes, if any</th>
</tr>
</thead>
<tbody>
<tr>
<td>$y = x$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$y = x^2$</td>
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</tr>
<tr>
<td>$y = x^3$</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$y = \frac{1}{x}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$y = \sqrt{x}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$y = \sqrt[3]{x}$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$y =</td>
<td>x</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$y = e^x$</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$y = \ln x$</td>
<td></td>
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<tr>
<td>$y = \sin x$</td>
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</tr>
<tr>
<td>$y = \cos x$</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
III. Problem Set (Computation)

Directions: Complete the following problems outlined below. You must show all your work and/or provide explanations to justify your answers.

1. Given that $f(x) = 2x - 3$, find the value of $f(x + h)$.

$$f(x) = \frac{1}{x + 2}, \text{ what is } \frac{f(x + h) - f(x)}{h}$$

3. What is the domain of the function $f(x) = \sqrt{x^3 - x^2}$?

4. What is the domain and range of the function $g(x) = \sqrt{x - 2} + 1$?
5. Find the domain of the function 

$$h(x) = \frac{7x}{x^3 - 36}.$$

6. What is the equation of the line parallel to the line $4x + 3y = 8$ that passes through the point $(2, -1)$?

7. Find the equation of the line given the point $(-3, 6)$ and slope $m = \frac{1}{2}$.

8. Given the two lines $2x + y = 5$ and $y = \frac{1}{2}x + 7$, are the lines parallel, perpendicular, or neither. Justify your answer.

9. If the point with coordinates $(3, k)$ is on the line $2x - 5y = 8$, what is the value of $k$?

For problems 10 through 13, use the given functions $f(x) = 3x + 5$ and $g(x) = x^2$ to find the following:

10. $(f \circ g)(x)$

11. $(g \circ f)(x)$

12. $(f \circ f)(x)$

13. $(f \circ g)(-2)$
For problems 14 and 15, find the inverse of the function:

14. \[ f(x) = \frac{1}{3}x \]

15. \[ g(x) = \frac{x - 1}{5} \]

For problems 16 and 17, verify the functions are inverses:

16. \[ f(x) = \frac{1}{x} \text{ and } g(x) = \frac{1}{x} \]

17. \[ f(x) = 3 - 4x \text{ and } g(x) = \frac{3 - x}{4} \]

18. What is the vertex of the function \( f(x) = (x + 4)^2 + 3 \)?

19. Given the function \( f(x) = 3x^2 + 2x - 1 \), does the function have a maximum or a minimum? Justify your answer.
20. What is the equation of a quadratic function with a vertex of \((0, \frac{1}{3})\) that passes through the point \((3, \frac{55}{3})\) and opens upward?

21. What are the zeros of the function \(f(x) = x^4 - 3x^3\)? Make sure to identify any multiple roots.

22. If the function \(f(x) = (2x - 1)(x^2 + 1)(x - 5)^2\), then \(f(x)\) has how many unique real roots?

23. Identify the \(x\)-intercept(s) of the function \(f(x) = 4x^4 - 7x^3 - 15x^2\)?

For problems 24 through 27, find the vertical and horizontal asymptotes (if any) for each function.

24. \(f(x) = \frac{5x}{x - 1}\)

25. \(g(x) = \frac{2x^2}{x^2 - 9}\)
26. \[ h(x) = \frac{2}{x - 6} \]

27. \[ k(x) = \frac{7x^4 + 2}{3x^2 - 2x - 1} \]

For problems 28 and 29, evaluate the functions for \( x = -2, -1, 0, 3, 4 \). Keep answers written as exact values with positive exponents.

28. \[ g(x) = 4^x + 1 \]

29. \[ k(x) = 2e^{-x} \]

For problems 30 through 32, expand each logarithm:

30. \[ \ln \frac{(3x - 5)^2}{7} \]
For problems 33 through 35, condense each logarithm to a single quantity:

33. \( \log x - 2 \log y + 3 \log z \)

34. \( 2 \ln 8 + 5 \ln(x - 4) \)

35. \( 3 \ln 2 - 7 \ln x \)

For problems 36 through 39, solve the following equations. Make sure to note any extraneous solutions.

36. \( 8^x = 4 \)
37. \( \ln x - \ln 5 = 0 \)

38. \( 2e^{3x} = 32 \)

39. \( \ln x + \ln (x - 26) = 3 \)

40. Given the angle, \( \Theta = \frac{4\pi}{3} \), identify the quadrant where this angle lies and evaluate \( \sin \Theta \), \( \cos \Theta \), and \( \tan \Theta \).

\[
\sin \Theta = \frac{3}{4}
\]

41. Given \( \frac{3}{4} \), sketch a triangle and find the values of the other five trigonometric functions.

For problems 42 through 44, use your knowledge of the unit circle to evaluate the following functions:

\[
\cos^{-1} \left( -\frac{\sqrt{3}}{2} \right)
\]

42.
43. \( \tan^{-1} (1) \)

44. \( \sin^{-1} \left( -\frac{1}{2} \right) \)

For problems 45 and 46, identify the amplitude and period for each function:

45. \( y = \frac{3}{2} \sin \frac{\pi}{3} \)

46. \( y = -10 \cos 4x \)

For problems 47 and 48, simplify the trigonometric expression:

47. \( \sin x \sec x \)

48. \( \csc^2 x - 1 \)
For problems 49 and 50, solve the trigonometric equations over the interval using trigonometric identities:

49. \[ 2 \cos x + \sin 2x = 0 \]

50. \[ \cos \left( x + \frac{\pi}{4} \right) - \cos \left( x - \frac{\pi}{4} \right) = 1 \]

IV. Problem Set (Communication)

Directions: Complete the following problems in short answer form. On the AP® Exam, it is important you are able to communicate mathematics and its applications. In complete sentences, answer the following questions fully and clearly.

51. Being able to illustrate mathematics and make connections with real-life applications is an important factor to any mathematics course, but it is especially important for AP® Calculus. For each of the following types of functions, provide an example with a clear and thorough explanation of an application that uses that function.
   a. Linear
   b. Quadratic
   c. Rational
   d. Exponential
   e. Logarithmic
   f. Trigonometric
Your explanations should be your own work. However, you must cite your sources to any examples you used.

52. Using one of the examples you provided above, explain how to solve the application problem. Thoroughly explain the mathematics skills you use to solve each step of the problem. Make sure to emphasize the connection between your mathematical knowledge and the application to the example. Your response should represent a complete and well-explained answer, in your own words, to the example you provided.
AP® Chemistry

Introductory Chemistry Skills

Answer the questions below using any general chemistry text or online resource of your choice. You must show all work to get credit. You can use the following link for your search in addition to any other resource you find beneficial. http://askthenerd.com/chemistryonline/TOC.html

It is strongly recommended that you use the Widener tutorials (http://science.widener.edu/svb/tutorial/) to practice your skills. You should be able to correctly complete most of the problems within the following chapters. If you can’t, it is in your best interest to take time to review the material before class starts. Write down questions that we can discuss in the first week of class. The most successful students in AP Chemistry are proactive in their learning.

- Chapter 1 Matter & Measurement
- Chapter 2 Atoms & Elements
- Chapter 3 Molecules, Ions & Compounds
- Chapter 4 Chemical Equations & Stoichiometry

In this assignment, you will use the numbers in your cell phone number to show examples or calculations. If you do not have a cell phone, randomly choose 7 digits to work with. Add those seven digits into the boxes below:

<table>
<thead>
<tr>
<th>A</th>
<th>B</th>
<th>C</th>
<th>-</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
</tr>
</thead>
</table>

For example, if my cell phone was 264-9873:

<table>
<thead>
<tr>
<th>2</th>
<th>6</th>
<th>4</th>
<th>-</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>3</th>
</tr>
</thead>
</table>

| A | B | C | D | E | F | G |

The problems will refer to the associated letters of your 7-digit number. For example, you may be asked to add B.DE to ACG. In my case, that would look like: 6.97 + 243. Do you see it? Let’s begin!

1. Summarize, in your own words, the rules for measuring with significant figures.

2. Draw a picture showing 2 rulers: one that shows a measurement using 3 significant figures, and one that shows a measurement that would only have 2 significant figures.
3. Draw a picture of a graduated cylinder that shows a measurement of **15.23 mL**. Make sure you draw the meniscus correctly.

4. For each of the following measurements, re-write by replacing the letters with your cell phone digits, and report the number of significant figures and **explain** which significant figure rule(s) you used to determine the answer:

   a. **DB.C L**
   b. **0. BC0 mL**
   c. **0.00FE kg**
   d. **AE00G g**
   e. **AC00 mol**

5. Complete each of the following calculations, re-write by replacing the letters with your cell phone digits, and report the **answer** with the correct number of significant figures and **explain** which significant figure rule(s) you used to determine the answer:

   a. **E.D g + A0B.00 g =**
   b. **E.D mL x A0B.00 mL =**

6. Use dimensional analysis to convert **DFG.AB ounces** into liters. Be sure to use proper significant figures.

7. How many atoms of sodium hydroxide are present in **AC.E grams**?

8. Write the complete, balanced equation for the reaction between iron (III) oxide and carbon monoxide.

9. Using the reaction from #6, calculate the theoretical and percent yields if **A.DE grams of iron (III) oxide** reacts with **C.BD grams of carbon monoxide**.

10. What is the difference between *dissolving* sodium chloride and *melting* sodium chloride.

11. Write the complete electron configuration for a transition element, then
a. Label and explain each of the parts of the configuration. (For example, the configuration for Helium is 1s\(^2\) – what do the 1, s and 2 represent?)

b. Explain how one uses the periodic table to determine the configuration.

12. Write the noble gas configuration for the element you chose in #9. Explain the relationship between the two configurations.

13. Complete the table below:

<table>
<thead>
<tr>
<th>Formula</th>
<th>Electron dot symbol</th>
<th># of electron pairs around central atom</th>
<th>Electron pair geometry</th>
<th>Molecular structure</th>
<th>Shape of molecule</th>
<th>Polarity (polar or non-polar)</th>
<th>Hybridization of central atom</th>
</tr>
</thead>
<tbody>
<tr>
<td>H(_2)O</td>
<td>H:(\cdot\cdot\cdot)O:(\cdot\cdot\cdot)H</td>
<td>4</td>
<td>Tetrahedral</td>
<td>H(\cdot\cdot\cdot)O(\cdot\cdot\cdot)H</td>
<td>bent</td>
<td>Polar</td>
<td></td>
</tr>
<tr>
<td>PF(_3)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PCl(_5)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>CH(_2)Cl(_2)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>NH(_3)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>COCl(_2)</td>
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</tbody>
</table>
The AP® Computer Science A course focuses on fundamental programming algorithms using the Java language. This summer assignment has you practicing pre-requisite skills and introduces new content to help you transition more smoothly during the first week of the course.

Assignment:

Address each of the following, clearly labeling your responses for each portion of every question. It’s important to express your thoughts in your own words; do not just copy/paste off a website. In each case, provide an explanation with your work. This assignment is worth 50 points (10 points each).

1. Explore programming languages:
   1. Visit the TIOBE Index (https://www.tiobe.com/tiobe-index/). As of the current date, what percentage is Java in popularity?
   2. Explain how the TIOBE index determines programming language popularity.
   3. Which language seems to be increasing in popularity at a fast rate? Explain.
   4. Which programming language seems to be dying? Explain.
   5. The AP® CS A exam used to be taught in C++ and Pascal. Explain why you think Java is used as a teaching language as opposed to C++. Support your explanation with evidence and cite the sources that you used.

2. Compare programming languages:
   1. Do some research to write code that will display “Hello World” to the screen in Java and two other programming languages.
   2. Provide your code and identify the programming language for each; cite your sources for each example of code.
   3. Highlight at least three similarities and three differences that you see between the three versions of code.

3. Introduction to programming: algorithms and pseudocode
   1. Complete the following TedED lesson: What’s an Algorithm?. Watch the video and complete the “Think” portion of the lesson.
   2. Think of something you do every day. Develop an algorithm to describe that process step-by-step to someone who would completely unfamiliar with the process. You must include at least 4 actions, 1 decision, and 1 repeatable action. Make sure to italicize your actions, bold your decisions, and underline your repeatable actions.
   3. Convert your algorithm to pseudocode. Visit the BBC Bitesize: Designing an Algorithm website to learn more about pseudocode.
4. Programming: Scratch

1. Visit the MIT Scratch programming site (https://scratch.mit.edu/)
2. Create a program in Scratch that calculates the hypotenuse of a right triangle given two legs.
3. Capture screenshots of your final code and paste into the word document.
4. Summarize the process that you used to create this program. What were the most intuitive steps? What were the most difficult challenging aspects? What did you learn in the process?

5. Programming: Introduction to Java

1. Go to the CodingBat (https://codingbat.com/java) Java programming site
2. Choose three problems from Warmup-1 (https://codingbat.com/java/Warmup-1) and solve them. It’s ok to use the solution button!
3. With each solution, you need to comment on each line of the code. Comments are short notes throughout the code that summarize or explain the intent of the code. For each line of code, explain what the code is doing.
4. There’s likely a lot of code you don’t understand or may not be able to interpret right away. Research the keywords such as public, Boolean, int, &, |, &&, ||, !, <=, >=, String to be able explain what each means in your comments.
5. Cite all sources you used to help you find answers.

How to submit your work:

Create a new document and complete each of the assignments one through five above. Make sure you complete each portion of every number and clearly label your responses.

Include your name at the top of your document and convert it to a pdf. On the first week of class, you will be directed to upload this document to the dropbox in your course.
AP® Computer Science Principles

The AP® Computer Science Principles course focuses on computational thinking skills vital for success in today’s world, as well as the impact of technology on society. This summer assignment has you practicing pre-requisite skills and foundational concepts to help you transition more smoothly during the first week of the course. 16% of your AP score for Principles will depend on the Explore Performance Task for your AP Digital Portfolio, which asks you to investigate a technology and its impact on society. To help you prepare for this class, you will investigate a recent computing innovation. This assignment is worth 50 points; you will need to submit it during the first week of class.

Assignment:

1. Choose a computing innovation that interests you*. The computing innovation must meet the following criteria:
   1. It uses an app to make decisions
   2. It stores, sends, and/or receives data.
   3. It has positive and negative effects on society.
   4. This innovation must have been discussed in at least three online articles in the last twelve months.

*Please note: you will not be able to complete your Explore task on this same innovation for the AP® exam. If any of the four aspects above are missing, please choose a different computing innovation.

Below are some possible resources to brainstorm topics:

- Popular Science: Best of What’s New
- URI: Computing Innovations
- Lafayette: Top 30 Innovations

2. Write a research paper between 400 and 600 words on the computing innovation that you chose. Do not just answer each question in a bullet point. Write a complete essay that blends the answers throughout the paragraphs. Be sure to cite the sources that you used properly.
   1. Name the computing innovation and describe its purpose.
   2. Explain what kind of data your innovation uses, and how it obtains, interprets and/or generates data. This will require you to do some research on the technology.
   3. Explain at least one beneficial effect and one harmful effect the computing innovation can have on society. Support your argument with evidence.
   4. Provide an image of your computing innovation and explain what the image shows.
5. Make sure to cite all of your sources (MLA format) and reference the information that you present appropriately. Please refer to the resources below to help guide your writing:
   a. Academic Integrity at Princeton for guidance on when to cite sources and how to avoid plagiarism
   b. Purdue Online Writing Lab (OWL) for guidance on proper citations in MLA style

How to submit your work:

Create a new document for your research. Make sure your name is at the top and convert it to pdf. On the first week of class, you will be directed to upload this document to the dropbox in your course.
Welcome to AP Economics. I am excited that you have decided to accept the challenge of taking an advanced placement class. You will strengthen your academic, intellectual, observation, and discussion skills. It is my hope that you will develop a love and passion for economics and will want to continue in this field of study as you move forward to college. The summer assignment is due during Week 1 of the course. It is worth 50 points.

Directions
Read and summarize 4 articles from the following websites:
- CNN Money
- The Economist
2 articles from July, 2 articles from August
Write a brief summary of each article (MAX 1 page)
Summary should include the following:
- TITLE, DATE, AUTHOR, and LINK to the article
- Overview of information presented in the article
- Your opinion on how what you read applies to the world and/or yourself
- Connection to one of the 10 principles of economics

10 principles of Economics by N. Gregory Mankiw
1. People face tradeoffs. To get one thing, you have to give up something else. Making decisions requires trading off one goal against another. This also relates to scarcity. Because items are scarce we cannot have all of everything we want, so we must make choices.
2. The cost of something is what you give up to get it—called opportunity cost. Decision-makers have to consider both the obvious and implicit costs of their actions.
3. Rational people think at the margin. A rational decision-maker takes action if and only if the marginal benefit of the action exceeds the marginal cost.
4. People respond to incentives. Behavior changes when costs or benefits change.
5. Voluntary trade can make everyone better off. Trade allows each person to specialize in the activities he or she does best. By trading with others, people can buy a greater variety of goods or services.
6. Markets are usually a good way to organize economic activity. Households and firms that interact in market economies act as if they are guided by an "invisible hand" that leads the market to allocate resources efficiently. The opposite of this is economic activity that is organized by a central planner within the government.
7. Governments can sometimes improve market outcomes. When a market fails to allocate resources efficiently, the government can change the outcome through public policy. Examples are regulations against monopolies and pollution. But it can also harm market outcomes with price controls such as ceilings and floors. These can result in shortages and surpluses.
8. A country's standard of living depends on its ability to produce goods and services. Countries whose workers produce a large quantity of goods and services per unit of time enjoy a high standard of living. Similarly, as a nation's productivity grows, so does its average income.
9. Prices rise when the government prints too much money. When a government creates large quantities of the nation’s money, the value of the money falls. As a result, prices increase, requiring more of the same money to buy goods and services. This is called inflation.

10. Society faces a short-run tradeoff between inflation and unemployment. Reducing inflation often causes a temporary rise in unemployment. This tradeoff is crucial for understanding the short-run effects of changes in taxes, government spending and monetary policy.
AP® English Language and Composition

Summer Reading Assignment

To introduce you to the skills and content this course will cover throughout the year, you are to read ONE of the following texts during the summer:

1. Anne Lamott’s *Bird by Bird, Some Instructions on Writing and Life* (humorous, best-selling memoir about writing)
2. Stephen King’s *On Writing* (nonfiction text about writing—humorous and instructive)
3. Henry David Thoreau’s *Walden* (classic nonfiction text about exploring life in nature and with/without society)

You will need to have completed this reading in order to do well on some early course assignments. Happy reading!
AP® English Literature and Composition

Summer Reading Assignment

- This assignment is due at the end of the Week 3
- Length: ¾ to one page long for each Literary Response Journal
- This assignment is worth 50 points
- You should expect to spend approximately 2 hours reading the four stories and 4-5 hours of writing your analyses.

You are to complete a Literary Response Journal for each of the four short stories you have selected from the list below. An LRJ should convince me that you have read and thought carefully about each short story. Even if your understanding of the story does not match mine, yet your journal clearly proves that you read (or misread) the story, you may well receive full credit. Your grade is based on content—what you have to say, how well you say it, your thoughts and feelings about the story, and your explanation of the logic that led to your interpretation. If your interpretation is an obvious parroting or paraphrase of an on-line help site, such as Spark notes, I am very likely to know. I have also been to those sites, and I know what they say. Please do your own thinking here!

Your grade is also based on following directions, and your responses should be carefully proofread and virtually free of spelling and mechanical errors. To receive credit, you MUST include the following in every LRJ:

- The story’s title in quotation marks
- The author’s name
- Specific references to the short story
- Careful thought
- A quotation from the story - integrated with your own sentence, properly punctuated and commented upon as necessary to show how this particular passage is relevant and important to the overall piece. Quotes should NOT be longer than three lines each, though you can have more than one quote. Short quotes with thorough explanations are much clearer than longer quotes where the reader has to try to figure out how all this quoted material proves a point you’re making.

After you have met the requirements above, you may choose any of these other elements to guide your response.
1. an analysis of a major character—flat/round, static/dynamic, internal/external conflicts, dominant traits, significant actions personal relationships.

2. a comparison/contrast of related characters—protagonist/antagonist, foils, doubles, stereotypes, stock character

3. a discussion of the role(s) played by minor character(s)

4. an analysis of the plot structure and how it contributes to the overall theme

5. an analysis of the point of view and how it contributes to the overall theme

6. an analysis of the symbolism and how it contributes to the overall theme

7. a discussion of the development of the theme

8. a detailed response to a specific word, phrase, sentence, passage, or scene

9. a close analysis of the author’s style—vocabulary, figurative language, imagery, sentence structure, dialogue/narration.....

10. a transformation of the story to another form, such as a poem, a letter, a play, a news story, a commercial, a cartoon, a soap opera, a fable.....

11. an original poem developing in some way from the assigned story

DO NOT, under any circumstances, merely summarize the story. You are doing analysis, not summary.

Choose two items from List A and two from List B. These stories are widely available in anthologies at your school or library. You can also do an internet search and see if you can find them online. We have provided links to some of them below.

<table>
<thead>
<tr>
<th>List A</th>
<th>List B</th>
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</thead>
<tbody>
<tr>
<td>“The Legend of Sleepy Hollow”</td>
<td>“The Yellow Wallpaper”</td>
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<tr>
<td>by Washington Irving</td>
<td>by Charlotte Perkins Gilman</td>
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<tr>
<td>Short Story Title</td>
<td>Author</td>
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<tr>
<td>&quot;The Minister's Black Veil&quot;</td>
<td>Nathaniel Hawthorne</td>
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<td>&quot;The Short, Happy Life of Francis McComber&quot;</td>
<td>Ernest Hemingway</td>
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<tr>
<td>&quot;Bartleby the Scrivener&quot;</td>
<td>Herman Melville</td>
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<tr>
<td>&quot;A Good Man is Hard to Find&quot;</td>
<td>Flannery O'Connor</td>
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<tr>
<td>&quot;A Very Old Man With Enormous Wings&quot;</td>
<td>Gabriel Garcia Marquez</td>
</tr>
<tr>
<td>&quot;Interpreter of Maladies&quot;</td>
<td>Jhumpa Lahiri</td>
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<tr>
<td>Two selections from &quot;Winesburg, Ohio&quot;</td>
<td>Sherwood Anderson</td>
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<tr>
<td>&quot;The Lottery&quot;</td>
<td>Shirley Jackson</td>
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<td>&quot;Bicentennial Man&quot;</td>
<td>Isaac Asimov</td>
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<tr>
<td>&quot;A Jury of Her Peers&quot;</td>
<td>Susan Glaspell</td>
</tr>
<tr>
<td>&quot;Everyday Use&quot;</td>
<td>Alice Walker</td>
</tr>
<tr>
<td>&quot;The Necklace&quot;</td>
<td>Guy De Maupassant</td>
</tr>
</tbody>
</table>
Overview: As a preview to this course, you will be investigating current events, and exploring how environmental science plays a role in your life. There are two parts to this assignment so be sure to scroll down to page 2 for Part 2. Some of the concepts you will explore, should look familiar to you from a biology or chemistry course. For others, you may need to do a little outside research. This assignment will be due within the first week of the course.

Part 1: Environmental Science Current Events

Directions:
1. Find two articles that have been published recently (2016-2019) that pertain to environmental science issues.
   a. The articles should cover different environmental issues
      i. Examples: chemical contamination, invasive species, endangered species, habitat destruction, climate changes, etc.
   b. Sources of information should be credible. Choose scientific publications, journals or newspapers. Some examples include:
      i. ScienceDaily
      ii. National Geographic
      iii. NY Times
   c. You must include a works cited at the end of your reflection in APA format.

2. Write a reflection of each article that addresses the following prompts in both parts a and b:
   a. Summarize the content of the article in your own words.
      i. Discuss the issue and when it started
      ii. Who/what is involved? iii. What is the environmental impact? How severe is it? iv. Is the issue being addressed? If so, how? If not, how come?
   b. What is your reaction to the article?
      i. What were you thinking as you read the article? ii. Did anything surprise you? Why or why not?
      iii. What other information do you wish you knew to more fully understand the situation?
      iv. What questions are you left? How might you find the answers?
      v. What part could you take to improve the environmental issue?
Part 2: Scavenger Hunt

Directions:

1. Let’s get out into nature! Your task is to take some time to explore the world around you. In doing so, you are to think about and document what you learn by using photographs you’ve taken, or drawings you create.

2. Your task is to locate, identify and explain at least 10 examples of the following concepts in your world. While you may need to use the Internet or books to review the concepts, the real goal is to find how and where you may interact with/witness these on a daily basis.

   1. Biogeochemical Cycles
   2. Biome
   3. Ecosystem
   4. Water Quality
   5. Biodiversity
   6. Species Richness
   7. Keystone Species
   8. Succession
   9. Soil Horizons
   10. Nonrenewable energy
   11. Renewable energy
   12. Modern Farming
   13. GMOs
   14. Climate Change
   15. Habitat fragmentation
   16. Invasive species
   17. Ecological footprint
   18. Indicator species
   19. Water pollution
   20. K-selected species
   21. R-selected species
   22. Indicator species
   23. Hypoxic zone
   24. Negative feedback loop
   25. Biomagnification
   26. Property of water necessary for life
   27. Organism crucial to the nitrogen cycle
   28. Symbiosis
   29. Environmental Indicator
   30. Endangered species

3. For each topic, respond to the following prompts:
   a. Summarize the concept in your own words.
   b. Explain the importance of the concept.
   c. Explain how your photograph or your drawing is evidence of the concept in your life.
      i. Include the location of the photograph
   d. Discuss how the concept impacts your life.
AP® European History

Overview: Students enrolled in VHS AP European History should complete all parts of the assignment below over the summer. You will submit this assignment at the end of Week 1; students who enter the class after Labor Day will need to complete this assignment by the end of week 4. This summer project is an indication of whether or not you are willing to do what is necessary to be successful in this course.

Purpose: Completing these assignments prior to our first day of class will provide you with a better understanding of European history and prepare you to evaluate European history as it relates to this course’s themes. Disciplining yourself to complete this work over the summer will also sharpen your time management skills, which will be essential to your success in this course. Remember that AP European History is a college-level survey course.

Complete Parts 1 and 2.

Part I: Map of Modern Europe
Locate the elements below on the downloadable map as directed. While you may use reference materials to complete this task, do not submit an already completed map from the Internet.

To begin, go to: Blank Map of Modern Europe. Download this map by choosing the WMF option from the choices available. This can be opened using Microsoft Word, PowerPoint, or Publisher; the map will open in “Paint,” through which you can create the required labels. Remember to save your work as your progress through the following list.

Required: Clearly identify and label each of the following:

1. Countries: ALL countries in Europe.
2. Rivers: Seine, Rhine, Danube, Po, Elbe, Volga, Dnepr, Dniester, Vistula, Loire, Rhone, Thames, Oder, Ural
3. Other Bodies of Water: North Sea, Aegean Sea, Mediterranean Sea, Caspian Sea, Tyrrenhenian Sea, Baltic Sea, Sea of Azov, Sea of Marmara, White Sea, Adriatic Sea, Ionian Sea, Black Sea, English Channel

For extra credit: Clearly identify and label each of the following:

5. Additional important cities: Istanbul, St. Petersburg, Venice, Florence, Naples, Marseilles, Genoa, Dover, Manchester, Calais, Belfast, Bonn, Munich, Avignon
6. Countries: ALL countries in Europe.
7. Mountain Ranges: Caucasus, Urals, Carpathian, Alps, Balkans, Pyrenees

Helpful Resources:
- www.euratlas.com
- www.nationalgeographic.com/geospy
- www.sheppardsoftware.com/European_Geography.htm
Part II: Introduction to Unit 1 (c. 1450 to 1648) and Key Concept 1.1
The worldview of European intellectuals shifted from one based on ecclesiastical and classical authority to one based primarily on inquiry and observation of the natural world.

Niccolò Machiavelli is an example of a Florentine writer and diplomat who promoted a secular model for individual and political behavior during the Renaissance. He began penning The Prince in July 1513 and finished it in 1514; however, it was not published until 1532 (five years after his death). This treatise on pragmatic leadership has become known as a byproduct of the revival of the civic humanist culture in the Italian City States and has led to Machiavelli’s auspicious title as the “father of modern political theory,” despite the ruthless, self-serving nature of his advice to those wielding power. Many historians also interpret The Prince as a critique of traditional philosophies regarding the most successful manner by which to rule a principality. Niccolò Machiavelli argues that a ruler should not care about these moral norms (or laws in general) and should only be concerned with authority and power. Not surprisingly, by 1559, Machiavelli’s book appeared on the pope’s “Index of Prohibited Books.”


Respond to each of the questions below with a minimum of four to five complete sentences per question. Answers should be double-spaced, 12-point font, parenthetically cited using MLA format, and checked for correct spelling and punctuation. You may include relevant quotes from The Prince; however, you may not use only directly quoted excerpts from The Prince to answer the questions. In other words, this assignment requires analysis of Machiavelli’s work, not verbatim pieces of evidence matched up with corresponding questions.

1. Renaissance humanists expressed great admiration for Greek and Roman political institutions. Describe the ways in which Machiavelli’s writing demonstrates his admiration for ancient Roman rulers.
2. Religious reform in the 16th and 17th centuries, the expansion of printing, and the emergence of civic venues challenged the control of the church over the creation and dissemination of knowledge. Discuss Machiavelli’s views on religion, and analyze how Machiavelli acknowledged the supreme power of God but maintained that man also has a measure of free will. Must man, according to Machiavelli, always be guided by the rules of the Church? (OS2)
3. During the Renaissance, new theories of knowledge and conceptions of the universe emerged. Analyze the role of the ruler as described in The Prince. How are Machiavelli’s notions connected to the concept of rational thought? (OS5)
4. Explain how Machiavelli’s theory of government and his political ideology aligned with his explanations for human behavior and the extent to which they adhered to or diverged from traditional explanations based on religious beliefs. (OS9)
5. Examine The Prince as a demonstration of the Renaissance emphasis on individualism, subjectivity, and emotion as valued sources of knowledge. (OS10)
6. Explain how Machiavelli’s work might contribute to the notion that religion increasingly shifted from a matter of public concern to one of private belief over the course of European History. (OS11)
7. How might The Prince exemplify the emergence of civic humanism (education designed to promote humanist leadership of political and culture life) and new conceptions of political authority during the Renaissance? (SP1)

8. What suggestions does Machiavelli make with regard to the changing relationship between states and ecclesiastical authority and the emergence of the principle of religious toleration? (SP3)

9. List and describe 10 qualities of a good ruler according to Machiavelli. (SP3, SP1)

10. What is the significance of the tale of the lion and the fox in Chapter 18? How does this relate to Machiavelli’s conception of political authority? (SP1)

NOTE: It is not necessary to read the entire book. The chapters are easy to follow and can be skimmed to find the gist of Machiavelli’s thoughts.
Faites trois des exercices suivants. Si vous voulez faire d'autres exercices on vous donnera du crédit supplémentaire.

Un peu de littérature.


Le Grand Michu - Questions portant sur le texte:

1. Faites une description de Michu.
2. Comment est-ce que le narrateur arrive à faire naître notre curiosité au commencement de cette histoire?
3. Comment est-ce que vous expliquez la réaction immédiate du narrateur?
4. La comparaison du narrateur à un conscrit, est-elle juste?
5. Quelle paroles du Michu nous montre sa maturité?
6. Quel effet est-ce que la dernière phrase de la première partie produit?
7. Qu’est-ce qui montre la sympathie de Zola envers le père de Michu?
8. Qu’est-ce que les gens qui appellent le père de Michu un brigand ont en commun?
9. Le père de Michu s’était battu pour quelle cause?
10. Expliquez la différence d’âge qui existe entre Michu et ses camarades.
11. Qu’est-ce que le proviseur a déclaré le jour des haricots à la sauce blanche?

12. Décrivez la scène ou la révolte commence.

13. Comment est-ce que les élèves “fortifient” le réfectoire?

14. Michu dit au narrateur “Je te rends ta parole,”. Ça veut dire quoi?

15. Quel changement est-ce que les élèves ont gagné à la fin de la révolte?

16. Qu’est-ce qui arrive au Grand Michu à la fin de l’histoire?

De la grammaire. Révisez la conjugaison des verbes. Vous trouverez un excellent site pour travailler sur le temps des verbes et tout aspect de la grammaire française chez « Tex » à l’université du Texas, Austin.

- Pour commencer allez à l’index de « la grammaire de l’absurde » et cliquez sur #5, verbs. Passez autant de temps que nécessaire à réviser cette section sur le présent.
- Ensuite travaillez sur la section « impératif ».
- Finalement, jetez un coup d’œil sur « la voix passive ».
- À la rentrée vous passerez un quiz sur les verbes.

N’hésitez pas à parcourir d’autres pages afin de connaître le site.

À la une.

- Cherchez sur Internet pour trouver des journaux français et choisissez un article. Lisez le article et écrivez un résumé. Donnez votre opinion personnelle des sujets. Envoyez-moi une copie de l’article avec le résumé. Vous trouverez une liste de journaux français à ce site: http://www.onlinenewspapers.com/france.htm
Écouter le français.


Chanter le français.


Essai.

- Considérez le proverbe : « Il faut de tout pour faire un monde ». Dans le contexte du premier thème que nous étudierons, la tolérance, qu’est-ce que cela vous dit ? Écrivez un essai pour exprimer vos pensées sur ce sujet.
AP® Human Geography

Welcome to AP Human Geography. I am excited that you have decided to accept the challenge of taking an advanced placement class. You will strengthen your academic, intellectual, observation, and discussion skills. It is my hope that you will develop a love and passion for geography and will want to continue in this field of study as you move forward to college. The summer assignment is due during Week 1 of the course. It is worth 50 points.

Directions

The Geography of Current Events

Over the course of the summer, find and read ANY FOUR articles of your own choosing from current newspapers, news magazines (I highly recommend The Economist, Newsweek, or Time magazines), or Internet news sites such as CNN, BBC, etc., dealing with some current world or geography-related issue such as (but not limited to) current political and ethnic conflicts around the world, world food and health issues, natural disasters and the human response to disasters, fluctuating gas prices, the current political landscape in the U.S., human rights issues, the national and global economic crisis, trade issues, challenges to the environment in the United States or around the world...basically any topic/event/issue relating to human or physical geography.

Do the following with these three articles:

- READ the articles.
- Write an essay for each article. Include the title, source, date and author of the articles.
- Identify and describe the main idea(s) of each article.
- Choose/decide which one of the 18 geography standards listed below best corresponds with the main idea(s) of each of your three chosen current news articles.
- Write three paragraphs (one paragraph for each article) explaining your decision (i.e., how each of your articles illustrates the points made in the matching geography standard).

Geography Standards:

The World in Spatial Terms
1. How to use maps and other geographic representations, tools, and technologies to acquire, process, and report information.
2. How to use mental maps to organize information about people, places, and environments.
3. How to analyze the spatial organization of people, places, and environments on Earth's surface.

Places and Regions
4. The physical and human characteristics of places.
5. That people create regions to interpret Earth's complexity.
6. How culture and experience influence people's perception of places and regions.

Physical Systems
7. The physical processes that shape the patterns of Earth's surface.
8. The characteristics and spatial distribution of ecosystems on Earth's surface.

Human Systems
9. The characteristics, distribution, and migration of human populations on Earth's surface.
10. The characteristics, distributions, and complexity of Earth's cultural mosaics.
11. The patterns and networks of economic interdependence on Earth's surface.
12. The process, patterns, and functions of human settlement.
13. How forces of cooperation and conflict among people influence the division and control of Earth's surface.
Environment and Society
   14. How human actions modify the physical environment.
   15. How physical systems affect human systems.
   16. The changes that occur in the meaning, use, distribution, and importance of resources.

The Uses of Geography
   17. How to apply geography to interpret the past.
   18. To apply geography to interpret the present and plan for the future.
AP® Physics 1

Answer the questions below using any general physics text or online resources of your choice. Some good links will be provided below. You must show all your work to get credit.

You may find these helpful:

- [http://www.lightandmatter.com/html_books/1np/ch01/ch01.html](http://www.lightandmatter.com/html_books/1np/ch01/ch01.html)

In this assignment, you will use the numbers in your cell phone number to show examples or calculations. If you do not have a cell phone, randomly choose 7 digits to work with. Add those seven digits into the boxes below:

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For example, if my cell phone was 264-9873:

<table>
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<tr>
<th>2</th>
<th>6</th>
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<th>9</th>
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</tbody>
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The problems will refer to the associated letters of your 7-digit number. For example, you may be asked to add **B.DF** to **ACG**. In my case, that would look like: 6.97 + 243. Do you see it? Let’s begin!

1. Summarize, in your own words, the rules for **measuring** with significant figures.

2. Draw a picture showing **2 rulers**: one that shows a measurement using **3** significant figures, and one that shows a measurement that would only have **2** significant figures.
3. For each of the following measurements, re-write by replacing the letters with your cell phone digits, and report the number of significant figures and explain which significant figure rule(s) you used determine the answer:

   a. DB.C L
   b. BC0 mL
   c. 0.00FE kg
   d. AE00G g
   e. AC00 mol

4. Complete each of the following calculations, re-write by replacing the letters with your cell phone digits, and report the answer with the correct number of significant figures and explain which significant figure rule(s) you used determine the answer:

   a. E.D mm+ A0B.00 mm=
   b. E.D g x A0B.00 g =

5. Use dimensional analysis to complete the following conversions. Be sure to use proper significant figures, and don’t forget to show your work!

   a. ABC inches to mm
   b. DFG.AB m/s into miles/hour

6. What is the decimal equivalent of A.ED x 10^9 ?

7. Write the following in scientific notation:

   a. 0.00BDA
   b. EEB
   c. 0.BGA
8. Use the following information and the image to answer questions:

*Line B touches the circle at a single point. Line A extends through the center of the circle.*

a. How large is the angle between lines $A$ and $B$? Explain your reasoning.

b. What is line $B$ in reference to the circle?

9. What is angle $C$? Show your work.

10. How large is $\theta$? Show your work.

11. Consider the following equations, and then answer the questions that follow:

- $b = \frac{a}{c}$
- $k = \frac{m_2}{t_2}$
- $g = z \sqrt{y}$

a) As $a$ increases and $c$ stays constant, what happens to $b$?

b) As $c$ increases and $a$ stays constant, what happens to $b$?
c) As $a$ decreases and $b$ stays constant, what happens to $c$?

d) If $m$ is tripled, and $t$ stays constant, $k$ is multiplied by what?

e) If $t$ is doubled and $m$ stays constant, $k$ is multiplied by what?

f) As $y$ increases and $z$ stays constant, what happens to $g$?

g) As $g$ increases and $y$ stays the same, what happens to $z$?

12. Use algebra to solve for the indicated variables. Show ALL steps:

   a. $V = IR$, solve for $I$

   b. $mgh = \frac{1}{2} mv^2$, solve for $v$

   c. $V_f^2 = V_o^2 + 2a(x_f-x_o)$, solve for $a$

13. Describe how you would go about solving how many golf balls would fit into a Honda civic.

14. Explain how the above example relates to the order of magnitude.

15. Discuss in your own words, when one would use order of magnitude in physics.
AP® Physics C

Answer the questions below using any general physics text or online resources of your choice. Some good links will be provided below. You must show all your work to get credit. This work should all be completed before the first week of classes.

You may find these links helpful:
- http://www.lightandmatter.com/html_books/1np/ch01/ch01.html
- http://www.us-metric.org/commonly-used-metric-system-units-symbols-and-prefixes/

In part of this assignment, you will use the numbers in your cell phone number to show examples or calculations. If you do not have a cell phone, randomly choose 7 digits to work with. Add those seven digits into the boxes below:

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
</tr>
<tr>
<td>F</td>
<td>G</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

For example, if my cell phone was 264-9873:

<table>
<thead>
<tr>
<th>2</th>
<th>6</th>
<th>4</th>
<th>-</th>
<th>9</th>
<th>8</th>
<th>7</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>B</td>
<td>C</td>
<td>D</td>
<td>E</td>
<td>F</td>
<td>G</td>
<td></td>
</tr>
</tbody>
</table>

The problems will refer to the associated letters of your 7-digit number. For example, you may be asked to add **B.DF** to **ACG**. In my case, that would look like: 6.97 + 243. Do you see it? Let’s begin!

1. Summarize, in your own words, the rules for **measuring** with significant figures.

2. Draw a picture showing 2 rulers: one that shows a measurement using 3 significant figures, and one that shows a measurement that would only have 2 significant figures.
3. For each of the following measurements, re-write by replacing the letters with your cell phone digits, and report the number of significant figures and explain which significant figure rule(s) you used to determine the answer:

   a. DB.C L
   b. 0. BC0 mL
   c. 0.00FE kg
   d. AE00G g
   e. AC00 mol

4. Complete each of the following calculations, re-write by replacing the letters with your cell phone digits, and report the answer with the correct number of significant figures and explain which significant figure rule(s) you used to determine the answer:

   a. E.D mm + AOB.00 mm =
   b. E.D g x AOB.00 g =

5. Use dimensional analysis to complete the following conversions. Be sure to use proper significant figures, and don’t forget to show your work!

   a. ABC inches to mm
   b. DFG.AB m/s into miles/hour

6. What is the decimal equivalent of A.ED x 10^5 ?

7. Write the following in scientific notation:

   a. 0.00BDA
   b. EEB
   c. 0.BGA
8. Use the following information and the image to answer questions:

*Line B touches the circle at a single point. Line A extends through the center of the circle.*

a. How large is the angle between lines A and B? Explain your reasoning.

b. What is line B in reference to the circle?

9. What is angle C? Show your work.

10. How large is θ? Show your work.

11. Consider the following equations, and then answer the questions that follow:

\[ b = \frac{a}{c} \quad \quad k = \frac{m_2}{t_2} \quad \quad g = z\sqrt{y} \]

a) As \( a \) increases and \( c \) stays constant, what happens to \( b \)?

b) As \( c \) increases and \( a \) stays constant, what happens to \( b \)?

c) As \( a \) decreases and \( b \) stays constant, what happens to \( c \)?

d) If \( m \) is tripled, and \( t \) stays constant, \( k \) is multiplied by what?

e) If \( t \) is doubled and \( m \) stays constant, \( k \) is multiplied by what?

f) As \( y \) increases and \( z \) stays constant, what happens to \( g \)?

g) As \( g \) increases and \( y \) stays the same, what happens to \( z \)?
12. Use algebra to solve for the indicated variables. Show ALL steps:

a. \( V = IR, \) solve for \( I \)

b. \( mgh = \frac{1}{2} mv^2, \) solve for \( v \)

c. \( v_f^2 = v_o^2 + 2a(x_f-x_0), \) solve for \( a \)

13. There are two methods to solving vector problems: tip to tail and parallelogram methods. Complete the following by showing both methods for each:

14. **Draw** the resultant vector for the following:

a. 

b.
15. Describe how you would go about solving how many golf balls would fit into a Honda Civic. What is the answer? Show your work.

16. Determine how many red blood cells it would take to stack from the top of Mount Washington in New Hampshire to the Moon. Show your work.

17. Explain how the above examples relate to the order of magnitude.
18. Discuss in your own words, the importance of order of magnitude in physics.

19. Draw a free-body diagram of someone pushing a refrigerator that shows:
   a. A net force of 80 N with the refrigerator moving to the left.
   b. The refrigerator in equilibrium.

20. Describe the motion of the automobile in the picture. Which direction would the car be moving and why?
21. Using the image above, explain what would have to happen for the car to move in the opposite direction.

22. A car has a mass of $2.0 \times 10^6$ grams. What is the net force required to achieve an acceleration of 5.8 m/s$^2$?

23. A man with a mass of 65 kg rides a bicycle with a mass of 20 kg. For the bicycle to obtain a constant speed of 6.0 m/s, it takes 7.2 seconds. What is the net force acting on the bicycle?

24. Create a concept map that relates work, energy, and power. Be sure the concept map includes examples. You may draw this and upload the image to this document.
AP® Psychology

Welcome to AP Psychology. Your summer assignment requires on-line access and/or library resources. If you cannot access the internet from home, public libraries have numerous computers for public use.

Answer the following questions in your own words. There are many online sources you can use; just be sure they are academic/scholarly in nature. The assignment also addresses some of the major researchers, theories and concepts we will study in the coming year, so it will prove useful to you.

***This assignment will be due by the end of Week 1. Students entering the course after Labor Day will have the opportunity to complete this during the first 4 weeks of the course.

#1) What is psychology? Elaborate beyond a “textbook” definition. (Short Essay)

#2) Identify all 15 of the following important figures in psychology and describe their most significant contributions. Please write 3-7 sentences for each.

- Albert Bandura
- Abraham Maslow
- Carl Rogers
- Howard Gardner
- Erik Erikson
- Ivan Pavlov
- Sigmund Freud
- William James
- B.F. Skinner
- Jean Piaget
- Wilhelm Wundt
- Philip Zimbardo
- John Watson
- Lawrence Kohlberg
- Stanley Milgrim

#3) Describe, explain, and give an example of the Nature versus Nurture debate. (Short Essay)

#4) Describe each of the 8 main perspectives within psychology listed below and give an example of the type of research a person might do within that perspective:

- Neuroscience
- Evolutionary
- Behavioral-Genetic
- Psychodynamic
- Behavioral
- Cognitive
- Social Cultural
- Humanistic
AP® Spanish Language and Culture

Students should complete the three assignments below. Time management, resourcefulness, and self-motivation are essential for the success of the summer assignment. The assignments will be submitted by the end of the third week of the course.

*Note: You are expected to do your own work and not use any online translators. The course is similar to a college course that requires students to submit original work. Your goal is not to worry about being perfect in Spanish at this time but to improve your comprehension and writing.

**Assignment #1: Reading Practice**

Reading comprehension and writing are important skills tested on the AP Spanish Language exam. To strengthen your Spanish reading comprehension and writing skills over the summer, you will read and summarize 3 news articles in Spanish. You will also document new words you learn and use those words in original sentences. Use the form to record the articles you have read and write your summaries.

Listed below are some popular news sites in Spanish. You are not limited to these; these are suggestions.

Popular News Websites in Spanish:
- BBC Mundo - [www.bbcmundo.com](http://www.bbcmundo.com)
- El País (España) - [www.elpais.com](http://www.elpais.com)
- Univisión - [www.univision.com](http://www.univision.com)

**Assignment #2: Listening Practice**

Listen to two different selections of Notes in Spanish at the advanced level. Write a 12-15 sentence summary in Spanish about what you heard. You may listen to the selection as many times as you need to in order to understand it. In each summary, tell me at least one new thing that you learned as result of listening to your chosen selection. Use the form attached to this packet to indicate which Notes in Spanish you have read and write your summaries.

Assignment # 3: Writing Practice

Write two double spaced pages in Spanish about yourself. Tell me where you were born and where you live. Tell me about your family, pets, school life, your friends, and your favorite and least favorite things. Tell me about things you’ve done in the past, what you’re doing now, and what you plan to do in the future. Lastly, tell me why you’re interested in learning Spanish.

AP Spanish Language News Article Record Sheet

Please complete the following information in SPANISH.

Título del artículo
____________________________________________________

Autor __________________________ Fecha _____________________

Nombre del periódico o sitio web
____________________________________________________

Parte I. Escribe 5 palabras nuevas que leíste en el artículo y sus definiciones en inglés.

1. ____________________________

2. ____________________________

3. ____________________________

4. ____________________________

5. ____________________________

Parte II. Escribe 5 frases originales usando las palabras nuevas que aprendiste del artículo.

1. ____________________________

2. ____________________________
Parte III. Escribe un resumen del artículo (10-12 frases).

________________________________________________________

________________________________________________________

________________________________________________________

________________________________________________________

________________________________________________________

NOTES IN SPANISH REPORT FORM

Notes in Spanish, Número y título:

________________________________________________________

Resumen:

________________________________________________________

________________________________________________________

________________________________________________________
AP® Statistics

This summer assignment is intended to be an independent assignment to review the prerequisite topics as well as skills needed for AP® Statistics. This will also be a useful guide to refer to topics such as algebra, types of graphs, and writing skills that you will utilize. This assignment will outline algebra topics, types of graphs, and writing skills that are needed to be successful in AP® Statistics. You will also explore some resources on these topics to review a variety of examples. Finally, you will apply these resources to answer some problems to help you prepare for the types of questions and writing assignments that are seen in an AP® Statistics course.

I. Algebra Topics

**Directions:** Review the table of algebra topics needed for statistics. Resources have been provided for each topic if any review or explanation is necessary. This table of topics and resources serves as an excellent primer to the AP® Statistics course.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evaluating expressions</td>
<td>Evaluating Expressions</td>
</tr>
<tr>
<td>Solving formulas for a variable</td>
<td>Solving Literal Equations</td>
</tr>
<tr>
<td>Solving equations in One Variable</td>
<td>Solving Equations, Part 1</td>
</tr>
<tr>
<td></td>
<td>Solving Equations, Part 2</td>
</tr>
<tr>
<td></td>
<td>Solving Equations, Part 3</td>
</tr>
<tr>
<td></td>
<td>Solving Equations, Part 4</td>
</tr>
<tr>
<td>Slope</td>
<td>What is the Slope of a line?</td>
</tr>
<tr>
<td></td>
<td>Find the Slope of a Line from a Graph</td>
</tr>
<tr>
<td></td>
<td>Find the Slope of a Line from Two Points</td>
</tr>
<tr>
<td></td>
<td>Find the Slope of a Line from an Equation</td>
</tr>
<tr>
<td>Equation of a Line</td>
<td>Linear Equations in Slope-Intercept Form</td>
</tr>
<tr>
<td></td>
<td>Linear Equations in Point-Slope Form</td>
</tr>
<tr>
<td></td>
<td>Linear Equations in Standard Form</td>
</tr>
<tr>
<td></td>
<td>Graphing Overview</td>
</tr>
<tr>
<td></td>
<td>Equation of a Line: Algebra vs. Statistics</td>
</tr>
</tbody>
</table>
II. Graphs

**Directions:** Review the table of the different types of graph statistics. Resources have been provided for each type if any review or explanation is necessary. This table of graphs and resources is a handful of the types of graphs that are seen in an AP® Statistics course. These should be types you may have seen in previous math courses.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bar graphs (charts)</td>
<td><a href="#">Bar Graphs</a></td>
</tr>
<tr>
<td></td>
<td><a href="#">Make a Bar Graph</a></td>
</tr>
<tr>
<td>Pie graphs (charts)</td>
<td><a href="#">Pie Charts</a></td>
</tr>
<tr>
<td></td>
<td><a href="#">Make a Pie Chart</a></td>
</tr>
<tr>
<td>Histograms</td>
<td><a href="#">Histograms</a></td>
</tr>
<tr>
<td></td>
<td><a href="#">Interpreting Histograms</a></td>
</tr>
</tbody>
</table>

III. Writing Skills

**Directions:** Review the table of resources on writing skills needed for statistics. These resources provide specific examples and how to communicate statistics. This table will be an excellent resource to refer to when you begin to practice answering AP® Statistics free response questions.

<table>
<thead>
<tr>
<th>Topic</th>
<th>Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing with Statistics</td>
<td><a href="#">OWL Purdue Online: Introduction to Writing with Statistics</a></td>
</tr>
<tr>
<td></td>
<td><a href="#">OWL Purdue Online: Quick Tips on Writing with Statistics</a></td>
</tr>
<tr>
<td></td>
<td><a href="#">OWL Purdue Online: Descriptive Statistics</a></td>
</tr>
<tr>
<td></td>
<td><a href="#">OWL Purdue Online: Writing with Descriptive Statistics</a></td>
</tr>
<tr>
<td></td>
<td><a href="#">OWL Purdue Online: Basic Inferential Statistics</a></td>
</tr>
</tbody>
</table>
IV. Problems

Directions: Complete the following problems. Make sure to show your mathematical steps in each problem.

\[ x - \bar{x} \]

1. Evaluate \( \frac{\_}{s} \) when \( x = 83, \bar{x} = 91, \) and \( s = 14. \)

\[ \frac{\_}{pq} \]

2. Evaluate \( \sqrt{\_} \) when \( p = 0.30, q = 0.70, \) and \( n = 23. \)

\[ \frac{s}{\sqrt{n}} \]

3. Evaluate \( \frac{\_}{\sqrt{n}} \) when \( s = 17.03 \) and \( n = 20. \)

4. Evaluate and find \( \hat{y} \) when \( \hat{y} = 63.1 - 12.3x \) and \( x = 4. \)
5. Evaluate \( \sqrt{\frac{p(1-p)}{n_1}} + \frac{p(1-p)}{n_2} \) when \( p = 0.34, n_1 = 24, \) and \( n_2 = 31 \).

For the following problems, round your answers to two decimal places:

6. Solve: \( x^2 + 1 = 30 \).

8. Solve: \( \ln x = 3 \).

9. Solve: \( \log x = 2 \).

10. Solve: \( \frac{x-7}{13.2} = \) ___.
11. Solve: \[ 0.04 = 1.96 \left( \frac{2.4}{\sqrt{x}} \right) \]

12. Given the graph below, answer the problems that follow:
   
   a. What is the slope of the line?
   
   b. What is the \( y \)-intercept?
   
   c. What is the equation of the line in slope-intercept form?

13. Given the graph below, answer the problems that follow:
   
   a. Identify two points on the line.
   
   b. What is the slope of the line?
c. What is the equation of the line? Use any linear form you choose.

*Write the following equations for the line in algebra as equations for lines in statistics:*

14. \( y = 6x + 3 \)
15. \( y = -2.4x - 3 \)

16. The figure below shows a bar graph and a pie chart of the data on preferred communication method for the random sample of Canadian students.

![Bar graph and pie chart showing preferred communication methods](image)

a. Which graph do you think is more effective in illustrating the data of the preferred communication method? *Explain your reasoning.*

b. If the random sample of Canadian students consisted of 145 students, how many students selected text messaging as their preferred communication method?
Complete the following problems in complete sentences, when necessary. On the AP® Exam, it is important you can communicate mathematics and its applications in context. Some of these problems have been pulled from past AP® Exams. For these problems, you will focus on answering the questions in context of the problem.

8. The following is an excerpt from a free response question from the 2014 AP® Exam:

Nine sales representatives, 6 men and 3 women, at a small company wanted to attend a national convention. There were only enough travel funds to send 3 people. The manager selected 3 people to attend and stated that the people were selected at random. The 3 people selected were women. There were concerns that no men were selected to attend the convention.

a. How many total sales representatives are considered in this problem?

b. Is the company small or large?

c. What do the sales representatives want to attend?

d. Why can only three people attend?

e. How did the manager select the three people?

f. What is the manager concerned about?
Researchers often mark wildlife in order to identify particular individuals across time or space. A study of butterfly migration is designed to determine which location on the butterflies’ wings is best for marking. The six possible locations are those shown as A through F in the figure. The butterfly in the figure is a monarch (Danaus plexippus).

Because marks in certain locations may be more likely to attract predators or cause problems than marks in other locations, the goal is to determine whether the six marking locations result in equivalent chances of successful migration. To test this, researchers plan to mark 3,600 butterflies and release them, then count how many arrive displaying each marking location at the end of migratory path.

a. What type of butterfly is represented in the figure?

b. How many butterflies does the researcher plan to mark and release?

c. Why do the researchers need to mark butterflies in different locations?

d. Describe location D on the butterfly?

e. How is location A different from location D?

f. Why do researchers mark wildlife?
19. The following is an excerpt from a free response question from the 1998

As part of its twenty-fifth reunion celebration, the class of 1988 (students who graduated in 1988) at a state university held a reception on campus. In an informal survey, the director of alumni development asked 50 of the attendees about their incomes. The director computed the mean income of the 50 attendees to be $189,952. In a news release, the director announced, “The members of our class of 1988 enjoyed resounding success. Last year’s mean income of its members was $189,952!”

a. Do you think the mean is the best statistical measure to use to estimate the typical income or do you think the median would be best? Explain.

b. A more detailed survey was planned to determine a better estimate of the income as well as other information about the alumni. The staff developed two methods in order to carry out the survey.

Method 1: Send out an email to all 6,826 members of the class asking them to complete an online form. The staff estimates that at least 600 members will respond.

Method 2: Select a simple random sample of members of the class and contact the selected members directly by phone. Follow up to ensure that all responses are obtained. Because method 2 will require more time than method 1, the staff estimates that only 100 members of the class could be contacted using method 2.

Which of the two methods would you select for estimating the average yearly income of all 6,826 members of the class of 1988? Explain your reasoning.
Records are kept by each state in the United States on the number of pupils enrolled in public schools and the number of teachers employed by public schools for each school year. From these records, the ratio of the number of pupils to the number of teachers (P-T ratio) can be calculated for each state. The histograms below show the P-T ratio for every state during the 2001-2002 school year. The histogram on the left displays the ratios for the 24 states that are west of the Mississippi River, and the histogram on the right displays the ratios for the 26 states that are east of the Mississippi River.

Compare the distributions of P-T ratios for states in the two groups (west and east) during the 2001-2002 school year. Make sure to include important observations.
AP® U.S. History

You will be responsible for completing the following assignment that will be due at the end of Week 3. The purpose of this assignment is to get you thinking about American history, and the role history can play in our lives. A further objective of the summer assignment is to help you develop your time management skills, which will be important during the year.

This assignment will be worth 50 points.

Read the entire speech “Knowing History and Knowing Who We Are” by historian David McCullough. The speech can be found here: http://www.realclearpolitics.com/Commentary/com-4_18_05_DM.html

After reading McCullough’s speech, you must choose three major points/ideas from the speech and support each point/idea by selecting and analyzing, in your own words, a specific historical example from American history that you believe illustrates each point/idea.

To help you do this, you are encouraged to think thematically, a skill that will be practiced throughout the course. The content of AP U.S. History is organized under seven themes:

- Identity
- Work, exchange, and technology
- Peopling
- Politics and power
- America in the world
- Environment and geography
- Ideas, beliefs, and culture

You can review these themes (pages 20-27) at the following College Board link: http://media.collegeboard.com/digitalServices/pdf/ap/ap-us-history-course-and-exam-description.pdf

“These themes focus student understanding of major historical issues and developments, helping students to recognize broad trends and processes that have emerged over centuries in what has become the United States.” (p. 20 in the AP U.S. History Curriculum Framework). As you read through the themes, be sure to also refer to the “Overarching Questions” and Learning Objectives.

Remember the following for your essay:

- Contains a well-developed thesis that clearly addresses the question
- Effective analysis of the documents and outside knowledge is evident (outside knowledge goes beyond the document)
- Effective use of the document
- Supports thesis with substantial and relevant outside information
- Is clearly organized and well-written
Lesson Objectives

Students will

- Identify important issues that persist in the world
- See the connection between historical issues and current events.
- Read and analyze news articles for connections to one of the five themes of World History

Introduction

The world around us is ever changing and those changes can greatly affect our lives. It is important for all of us to be aware of the events that are going on around us: locally, nationally and internationally. More importantly it is important to think about these events from a different perspective, i.e., a non-western perspective. Careful analysis of such events will give you a better understanding of history’s recurring themes and the changes that occur over time.

The Assignment

Select one of the following themes in world history to follow in current event news reports. Once you have selected your theme, select a region of the world. Please do not pick the United States, as it will be important to have a different perspective or point of view about your chosen theme. The current event
you choose must be substantial, and have major news coverage. You will then locate a minimum of 6 current event articles that fit the theme and the region you have chosen. Articles should not be more than a month old, from the start of your project, and be at least five paragraphs long (substantial).

Choose one of the following Themes. The first line of the theme is the main idea or theme. The lettered items below the main theme are parts of the main theme. They are listed to help you understand what goes into the main idea.

I. Interaction between humans and the environment: A. Demography and disease; Example: AIDS, Ebola
   - B. Migration; Example: from war torn or impoverished areas
   - C. Patterns of settlement; Example: for example urban versus rural
   - D. Technology; Example: use of alternative energy sources, or more traditional: oil drilling, coal mining, etc.

II. Development and interaction of cultures
   - A. Religions
   - B. Belief systems, philosophies and ideologies
   - C. Science and technology
   - D. The arts and architecture

III. State-building, expansion and conflict
   - A. Political structure and forms of governance
   - B. Empires
   - C. Nations and nationalism
   - D. Revolts and revolutions
   - E. Regional, transregional, and global structures and organizations

IV. Creation, expansion and interactions of economic systems
   - A. Agricultural and pastoral production
   - B. Trade and commerce
   - C. Labor systems
   - D. Industrialization
   - E. Capitalism and socialism
V. Development and transformation of social structures
   A. Gender roles and relations
   B. Family and Kinship
   C. Racial and ethnic constructions
   D. Social and economic classes

VI. Technology and Innovation AP World Regions (choose one)

- Africa
- The Americas (but not the US for this assignment)
- Asia
- Europe
- Oceania

<table>
<thead>
<tr>
<th>Sample News Sources</th>
<th>Internet Choices</th>
</tr>
</thead>
<tbody>
<tr>
<td>Al-Jazeera</td>
<td>Google News</td>
</tr>
<tr>
<td>Associated Press</td>
<td>Library of Congress</td>
</tr>
<tr>
<td>BBC</td>
<td>World Newspapers</td>
</tr>
<tr>
<td>The Guardian</td>
<td>*Radio (NPR) or Ted Talks (recent) are</td>
</tr>
<tr>
<td>National Geographic News</td>
<td>acceptable if a transcript is made</td>
</tr>
<tr>
<td>Reuters</td>
<td>available</td>
</tr>
</tbody>
</table>

Expectations

This will be a bit like a scavenger hunt as it is not always easy to find the best type of articles (so please don’t wait until the last minute to do this work). Use a variety of sources that may come from: Newspapers, weekly news magazines, and/or professional news sources located on the internet you are to:

Note: Please avoid using entertainment sources like: Buzzfeed or Huffington Post.
1. Gather your sources in a file or folder, in pdf format or jpeg format, your teacher will want to be able to read them as well.

2. For each of the six articles you have chosen you should write or type a summary in the following format:
   • Article Title and Author
     ○ What kind of article is this? (investigative report, op-ed or regular column?)
     ○ Who is the author? What are their credentials (qualifications) in connection with the event or issue they are writing about? What is their thesis, argument or claim?

   • Summary of the Article
     ○ In your own words write a summary paragraph about the article. This summary needs to be at least 6-8 sentences long. Do not copy from the article. Think about what?, when?, where?, and why?

   • Evidence
     ○ What are the key facts the author cites as supporting evidence? What other evidence or reasoning does the author provide (or imply) to support his/her claims. You may use a quote from the article in this section of your analysis.

   • Connections
     ○ Write a minimum of 3-4 sentences discussing how this article connects to your chosen AP World History theme and how it is important to society. Think about who this event impacts and how. How credible did you find the article and why?

   • Questions
     ○ What questions crossed your mind as you read this article. Identify a minimum of 2.

   • Source citation (MLA Format)
     ○ If unsure how to format use O.W.L. at Purdue as a guideline.

   • Save Work
     ○ Save your work as .pdf or .word. Additionally, Googledocs and .pages files will need to be converted or saved as pdf files.

Final Assessment will be due during Week 3