

Summer Math Review 2017
For Section 12 AP Statistics

- You may use a calculator for all of this work.
- Work on a separate sheet of paper.
- Show all work.

Section 1 – Calculator work

Calculate each of the following. Round to 3 decimal places where appropriate.

1. $2.33 + 6.77 - 4.44$

2. $\frac{1.34+9.45}{4.21}$

3. $\sqrt{2.3 \cdot 3.4 - 1.2}$

4. $3.4 \left(\frac{1}{2.1} + \frac{1}{1.7} \right)$

5. $\frac{0.934+2.361}{1.45-0.723}$

6. $\left(\frac{5.4}{2.3+1.1} \right)^2$

7. $\sqrt{\frac{1.74 \cdot 0.761}{0.092}}$

8. $1 \frac{1}{3} \cdot \frac{2}{7} \cdot 2 \frac{2}{5}$

9. $\frac{2.376+3.456}{2\pi}$

10. $\left(\frac{1.2+3.4}{5.6-7.8} \right)^4$

11. $\sqrt[4]{(0.8716 - 0.2034)}$

12. $\frac{0.123^{-4} - \sqrt{2.3+9.8 \cdot 0.37}}{-23.45}$

Section 2 – Averages and Spread

For each of the following sets of data, find the

- i. mean
- ii. median
- iii. mode
- iv. range

a. 3 4 5 7 7 9 10 11

b. 135, 142, 145, 156, 149, 134, 139, 126, 147, 152, 153, 145, 144

c.

x	3	4	5	6	7
frequency	4	6	10	12	8

d.

Number of siblings	0	1	2	3	4	5
Frequency	45	72	54	17	9	3

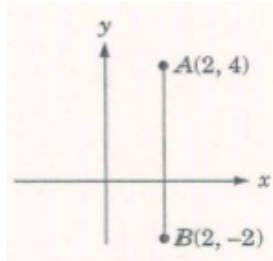
e. (Hint: put these in a table first)

21 27 24 23 22 24 23 25 23 23 26 27
24 27 26 27 24 22 21 21 24 23 23 26
25 26 25 24 22 21 20 20 25 27 26 27
26 25 24 22 21 24 23 25 25 26 27 20

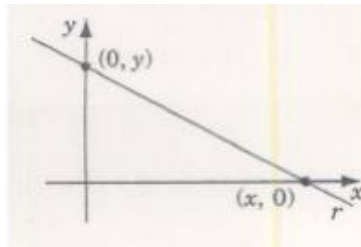
Section 3 – Graphing

Remember, calculators are allowed (and recommended!) here.

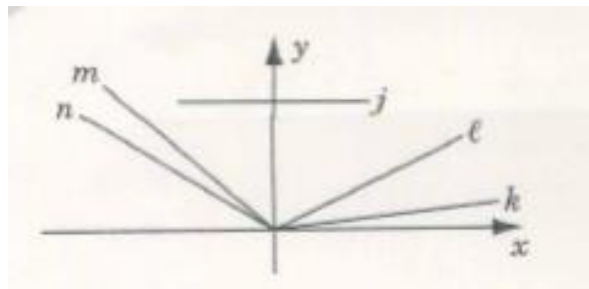
1. In the figure below, what are the coordinates of the midpoint of \overline{AB} ?



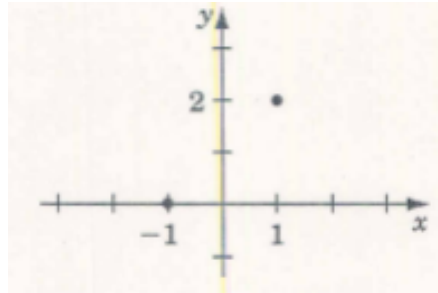
2. All of the following are coordinates of the same straight line, except...
A (0, 2) **B** (3, 11) **C** (5, 15) **D** (7, 23) **E** ($x, 3x + 2$)
3. Which of the following points is the greatest distance from the y -axis?
A (1, 10) **B** (2, 7) **C** (3, 5) **D** (4, 3) **E** (5, 1)
4. In the figure below, the line r intersects the x -axis and y -axis at $(x, 0)$ and $(0, y)$ respectively. What is the slope of the line r ?



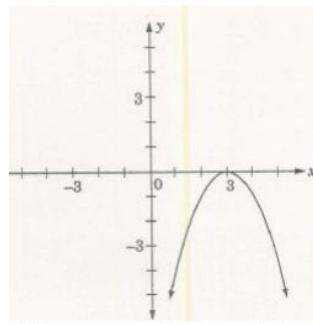
5. In the figure below, the line segments j, k, l, m and n are drawn. Which line segment has the greatest slope?



6. In the figure below, line m (not drawn) passes through points with coordinates $(-1, 0)$, $(1, 2)$ and $(0, y)$. Find the value of y .



7. Which equation is best represented by the graph below?



A $y = -(x + 3)^2$

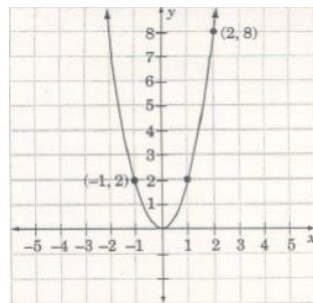
B $y = -(x - 3)^2$

C $y = x^2 - 3$

D $y = -x^2 - 3$

E $y = -x^2 + 3$

8. Which equation is best represented by the graph below?



A $y = \frac{1}{4}x^2$

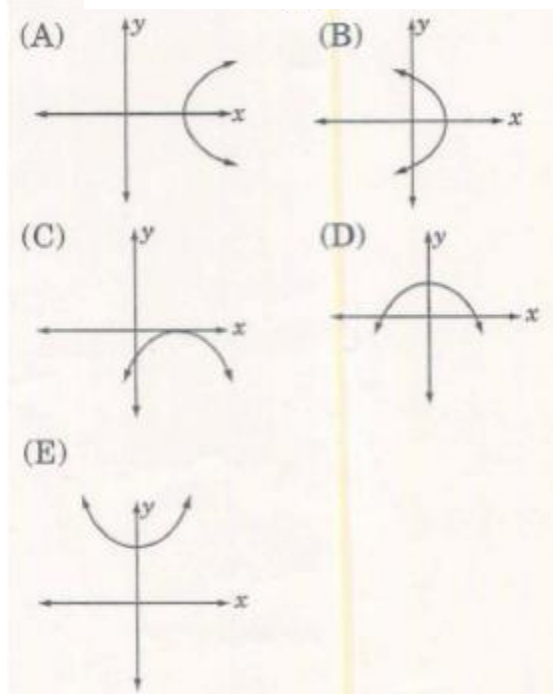
B $y = \frac{1}{2}x^2$

C $y = x^2$

D $y = -2x^2$

E $y = 2x^2$

9. Which of the following graphs represents the equation $y = -x^2 + 4$?



Section 4 - Probability

1. A letter is chosen at random from the word MAIMONIDES. Find the probability that the chosen letter is
 - a. M
 - b. in the first half of the alphabet
 - c. not a vowel

2. A box contains 3 blue balls and 4 red balls. Two counters are chosen at random, *with replacement*. Use a tree diagram to find the probability that
 - a. both counters are red
 - b. both counters are the same color
 - c. the counters are different colors

3. A bag contains 5 green counters and 7 yellow counters. Two counters are chosen at random *without replacement*. Find the probability that
 - a. after a green counter is chosen, the next counter is yellow
 - b. the first counter is yellow and the second is green
 - c. the counters are different colors

4. David leaves his homework to do until the morning, but sometimes he wakes up late and doesn't have time. David wakes up late three mornings out of every five. He manages to get his homework done with probability $\frac{9}{10}$ when he wakes early, but only one quarter of the time when he is late. What is the probability that David will get his homework done tomorrow morning?

5. Out of a class of 12 students, four are left-handed. The teacher chooses three students to help her with a project. Find the probability that all three chosen students are left handed.

Section 5 – Algebra

1. Evaluate $\frac{x-y}{z}$ when $x = 25$, $y = 7$, and $z = 9$

2. Solve $\frac{x+5}{3} = 7$

3. Find x to the nearest tenth: $\frac{13}{\sqrt{x}} = 3$