

Accelerated Pre-Calculus  
Summer Assignment 2018

Gentlemen,

In preparation for your Accelerated Pre-Calculus class next year, you are required to complete the following packet by the first full day of classes, August 29, 2018.

Make sure to SHOW ALL STEPS and circle your final answer. Please complete this assignment on separate paper.

This assignment includes topics that you have covered over the past few years in Algebra and Geometry. If you are struggling with a particular topic, use the countless resources available on the internet. Some suggested websites are:

<https://www.khanacademy.org/>  
<http://patrickjmt.com/>

This assignment will be assessed for completeness and will be given a homework grade. Failure to have this assignment or the first day will result in a zero for the homework grade. The assignment will be reviewed in preparation for a test which will be given within the first few days of school.

Enjoy your summer!

Mrs. Brennan

Name \_\_\_\_\_

**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.

**Find the distance  $d(P_1, P_2)$  between the points  $P_1$  and  $P_2$ .**

1)  $P_1 = (1, -3); P_2 = (-3, 0)$  1) \_\_\_\_\_

**Decide whether or not the points are the vertices of a right triangle.**

2)  $(9, -6), (15, -4), (14, -9)$  2) \_\_\_\_\_

**Find the midpoint of the line segment joining the points  $P_1$  and  $P_2$ .**

3)  $P_1 = (7, 1); P_2 = (-16, -16)$  3) \_\_\_\_\_

**Solve the problem.**

4) If  $(2, -2)$  is the endpoint of a line segment, and  $(-3, -4)$  is its midpoint, find the other endpoint. 4) \_\_\_\_\_

**Determine whether the given point is on the graph of the equation.**

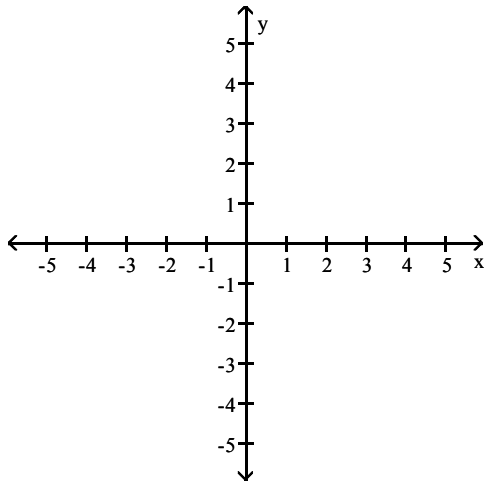
5) Equation:  $y = x^3 - \sqrt{x}$   
Point:  $(-9, -732)$  5) \_\_\_\_\_

**List the intercepts for the graph of the equation.**

6)  $y = x - 3$  6) \_\_\_\_\_

**Plot the point A. Plot the point B that has the given symmetry with point A.**

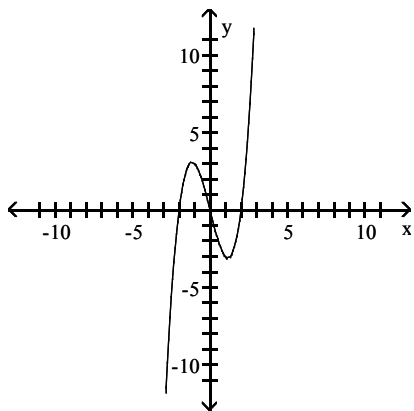
7)  $A = (-1, 3); B$  is symmetric to  $A$  with respect to the  $y$ -axis 7) \_\_\_\_\_



List the intercepts of the graph. Tell whether the graph is symmetric with respect to the x-axis, y-axis, origin, or none of these.

8)

8) \_\_\_\_\_



Determine whether the graph of the equation is symmetric with respect to the x-axis, the y-axis, and/or the origin.

9)  $4x^2 + 9y^2 = 36$

9) \_\_\_\_\_

Use a graphing utility to approximate the real solutions, if any, of the equation rounded to two decimal places.

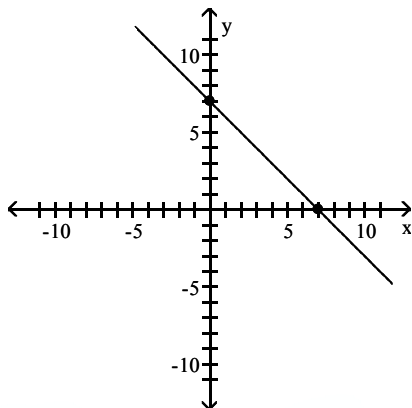
10)  $x^3 - 6x + 3 = 0$

10) \_\_\_\_\_

**Find the slope of the line.**

11)

11) \_\_\_\_\_



**Find an equation for the line, in the indicated form, with the given properties.**

12) Containing the points  $(-8, 3)$  and  $(-7, -2)$ ; slope-intercept form

12) \_\_\_\_\_

**Find the slope-intercept form of the equation of the line with the given properties.**

13) Slope = 0; containing the point  $(5, 7)$

13) \_\_\_\_\_

14) Slope =  $-8$ ; y-intercept = 15

14) \_\_\_\_\_

**Write the equation in slope-intercept form.**

15)  $6x + 7y = 5$

15) \_\_\_\_\_

**Find an equation for the line with the given properties.**

16) Parallel to the line  $-5x - y = 8$ ; containing the point  $(0, 0)$

16) \_\_\_\_\_

17) Perpendicular to the line  $y = 2x - 4$ ; containing the point  $(1, -2)$

17) \_\_\_\_\_

**Write the standard form of the equation of the circle with radius  $r$  and center  $(h, k)$ .**

18)  $r = 8$ ;  $(h, k) = (5, 9)$

18) \_\_\_\_\_

Solve the problem.

- 19) Find the equation of a circle in standard form where C(6, -2) and D(-4, 4) are endpoints of a diameter.

19) \_\_\_\_\_

SHORT ANSWER. Write the word or phrase that best completes each statement or answers the question.

Find the center (h, k) and radius r of the circle with the given equation.

20)  $3(x - 1)^2 + 3(y + 3)^2 = 45$

20) \_\_\_\_\_

21) Find the center and radius of the circle by completing the square:

$$x^2 + y^2 - 2x - 4y - 4 = 0$$

22) Find the domain of each:

a)  $f(x) = \frac{2}{x-3}$

b)  $g(x) = \sqrt{5-x}$

c)  $h(x) = \frac{5x}{\sqrt{x+1}}$

