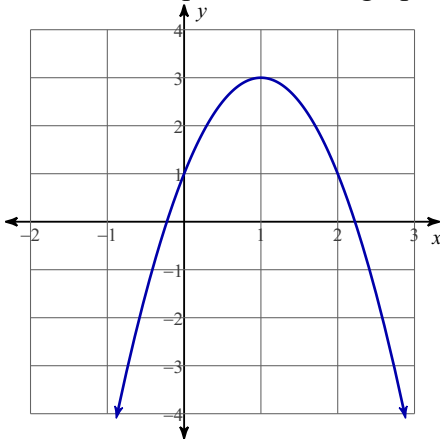
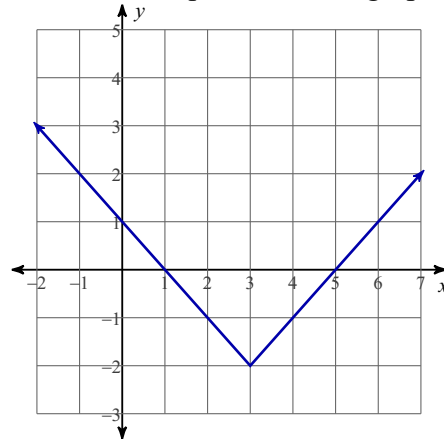


SM2-A HW #6-13 (Unit 6 TEST Preview)

1) What is the equation of the graph?



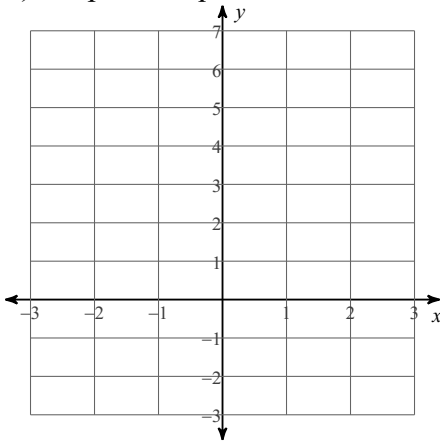
2) What is the equation of the graph?



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

a) What is the vertex?

b) Graph the equation

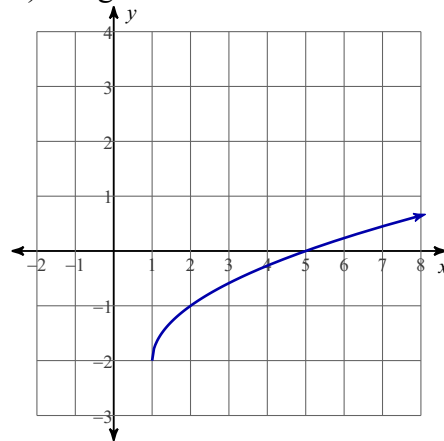


4) a) What is the equation that has been graphed?

b) Domain = ?

c) Where is the function positive?

d) Range = ?



5) Find the zeroes:

$$n^2 = 12$$

6) Find the zeroes by taking square roots:

$$y = (x - 1)^2 - 5$$

7) Which of the following equation types have inflection points?

- (a)  $y = x$  (b)  $y = x^2$  (c)  $y = x^3$  (d)  $y = \sqrt{x}$  (e)  $y = \sqrt[3]{x}$  (f)  $y = |x|$

8) Which of the following equation types have vertexes?

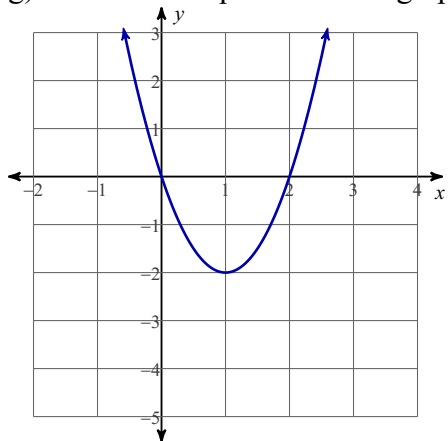
- (a)  $y = x$  (b)  $y = x^2$  (c)  $y = x^3$  (d)  $y = \sqrt{x}$  (e)  $y = \sqrt[3]{x}$  (f)  $y = |x|$

9) Which of the following equation types have either an absolute minimum or an absolute maximum?

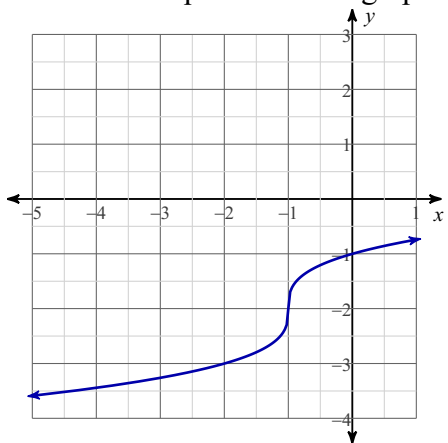
- (a)  $y = x$  (b)  $y = x^2$  (c)  $y = x^3$  (d)  $y = \sqrt{x}$  (e)  $y = \sqrt[3]{x}$  (f)  $y = |x|$

10) For the following function:

- a) where is the function increasing?  
b) where is the function decreasing?  
c) What is the axis of symmetry?  
d) What is the range of the function?  
e) Where is the function positive?  
f) What is the average rate of change from  $x = 1$  to  $x = 3$ ?  
g) What is the equation of the graph?

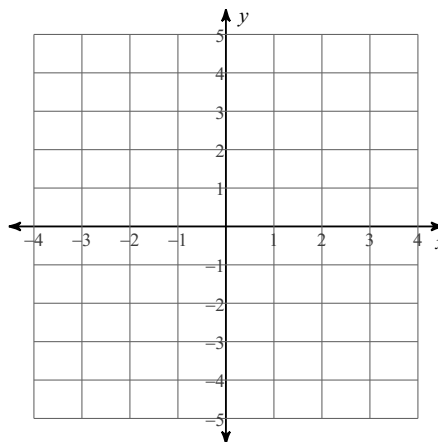


11) What is the equation of the graph?

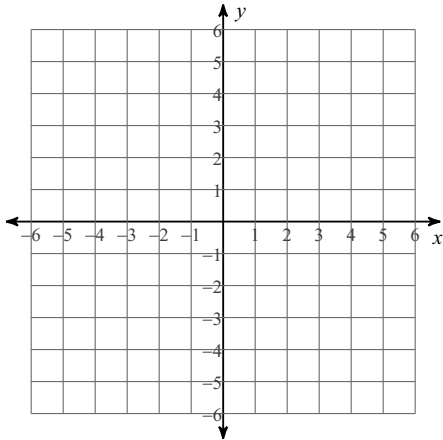


12) Graph the following piece-wise defined function.

$$y = \begin{cases} -x^2 + 1 & \text{for } x \geq 0 \\ x - 2 & \text{for } x < 0 \end{cases}$$



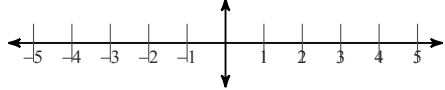
$$13) y \leq \frac{5}{4}x - 4$$



14) a) Solve the following inequality (write either an 'AND' or an "OR" compound inequality.

b) Graph your solution.

$$(x - 3)(x + 5) > 0$$



15) You buy 5 large pizzas and 7 small pizzas and spend of total of \$115.25.

The following week you buy 8 large pizzas and 3 small pizzas and spend a total of \$116.75. (You are now broke.)

a) Write a system of equations for this problem.

b) What is the price of a large pizza?

c) What is the price of a small pizza?

**Solve each system by substitution. Show your work!**

$$16) \begin{cases} -4x - y = -7 \\ -5x + y = 7 \end{cases}$$

$$17) \begin{cases} -7x - 6y = 12 \\ 7x - y = 2 \end{cases}$$