

SM2 HW #10-3 (Unit 3 and 4 Review)

Date _____ Period _____

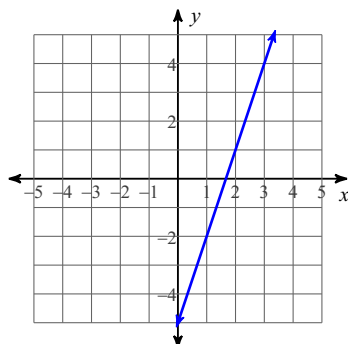
Factor the common factor out of each expression.

1) $-10x^4 + 8x^3 + 4x^2$

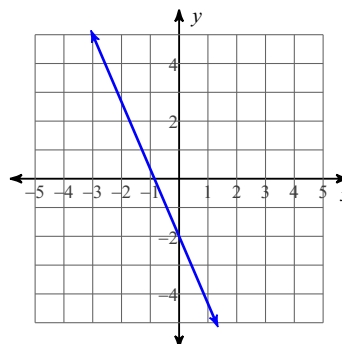
2) $-28k^3 - 36k^2 + 4k$

Write the slope-intercept form of the equation of each line.

3)



4)

**Write the slope-intercept form of the equation of the line through the given point with the given slope.**

5) through: $(-1, -4)$, slope = 6

Write the slope-intercept form of the equation of the line through the given points.

6) through: $(3, 2)$ and $(-5, 1)$

Write the slope-intercept form of the equation of the line described.

7) through: $(-4, -3)$, parallel to $y = \frac{1}{4}x + 4$

8) through: $(3, 3)$, perp. to $y = -\frac{3}{5}x + 5$

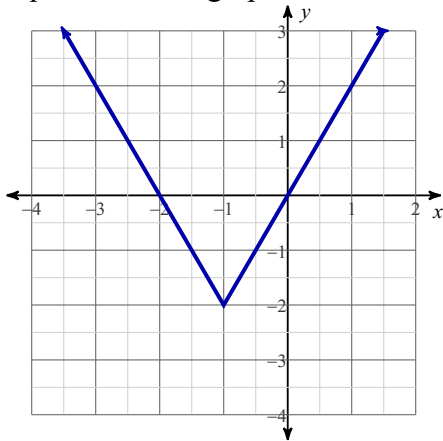
9) The cost of hiring a plumber, C , is a function of the time spent on the job, 't', in hours. If the plumber charges a fee of \$20 plus \$29 per hour.

What is the equation that models this situation?

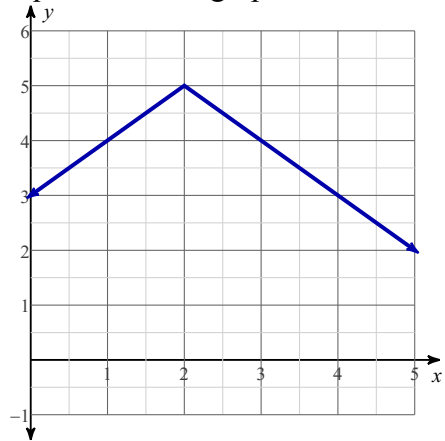
10) A customer bought 5 hamburgers and 7 drinks and paid a total of \$37.50

What is the equation that models this situation?

- 11) a) What is the vertex? (b) What is the equation of the graph?



- 12) a) What is the vertex? (b) What is the equation of the graph?



- 13) What is the vertex?
 $y = 4|x - 3| + 5$

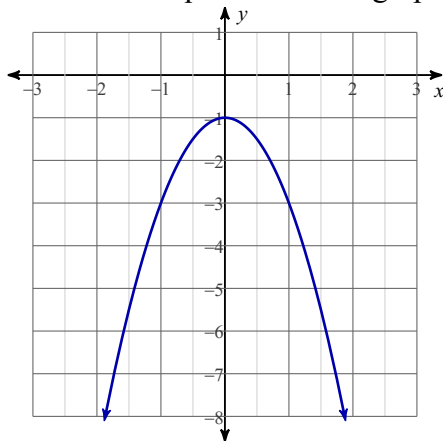
- 14) Convert the following x-y pairs into "function notation".

(2, 3), (0, 5)

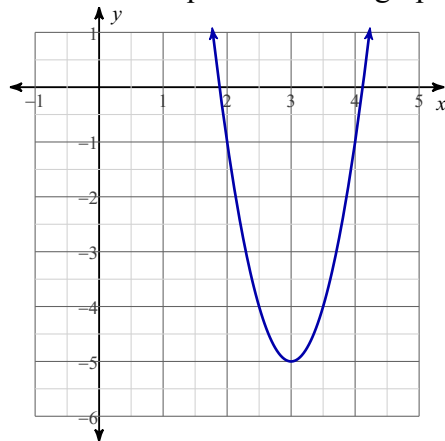
- 15) Compare the following equation to the parent function for quadratics $y = x^2$.
 a) Give the location of the vertex (x,y).
 b) Identify the transformations that have been applied to the parent function.

$$y = 6(x + 3)^2 - 1$$

- 16) What is the equation for the graph?



- 17) What is the equation for the graph?



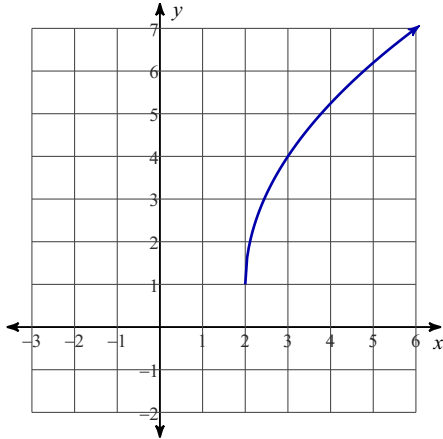
- 18) a) What is the domain?
 b) What is the range?
 c) What is the "endpoint"?

$$y = -4 + 2\sqrt{x - 3}$$

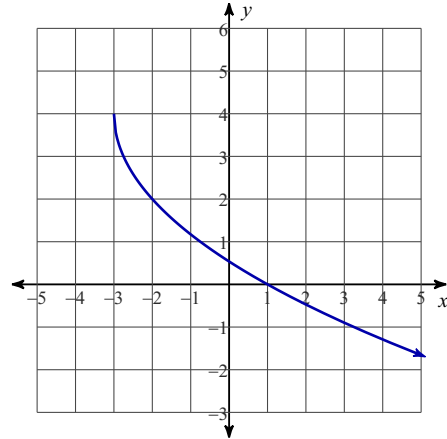
- 19) a) What is the domain?
 b) What is the range?
 c) What is the "endpoint"?

$$y = 5 - 2\sqrt{x + 1}$$

- 20) a) What is the equation of the graph?
 b) What is the domain?
 c) What is the range?

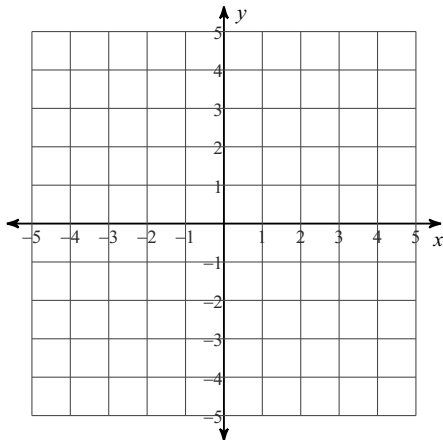


- 21) a) What is the equation of the graph?
 b) What is the domain?
 c) What is the range?



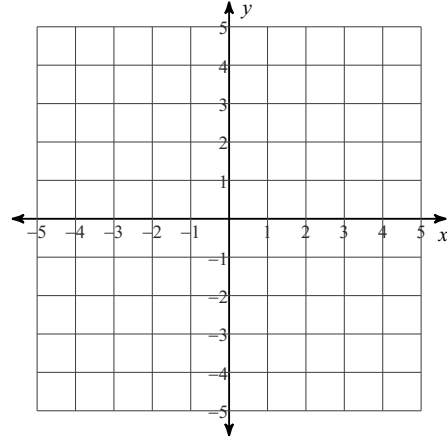
- 22) Graph the following piece-wise defined function:

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

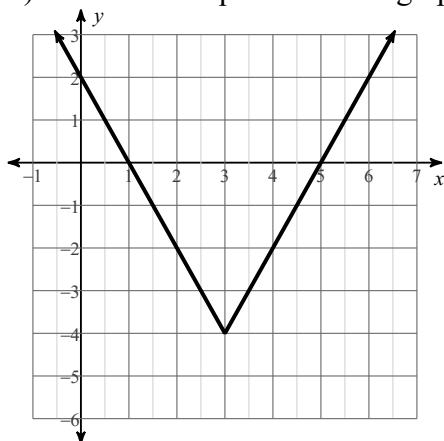


- 23) Graph the following piece-wise defined function:

$$y = \begin{cases} -3x + 1 & \text{for } x \geq 0 \\ 2x^2 - 3 & \text{for } x < 0 \end{cases}$$



- 24) a) Where is the function increasing?
 b) Where is the function decreasing?
 c) Where is the function positive?
 d) Is the function even, odd, or neither?
 e) Where are the extrema and what type are they?
 f) How is it related to its parent function?
 g) What is the end behavior? (use "infinity notation")
 h) What is the domain?
 i) What is the range?
 j) What is the average rate of change between $x = 1$ and $x = 3$?
 k) What is the equation of the graph?



- 25) a) Where is the function increasing?
 b) Where is the function decreasing?
 c) Where is the function positive?
 d) Is the function even, odd, or neither?
 e) Where are the extrema and what type are they?
 f) How is it related to its parent function?
 g) What is the end behavior? (use "infinity notation")
 h) What is the domain?
 i) What is the range?
 j) What is the average rate of change between $x = -2$ and $x = -1$?
 k) What is the equation of the graph?

