

College Algebra

Name: _____

Study Guide 7

Class: _____

Due Date: _____

Score: _____

No Work \Leftrightarrow No Points

Use Pencil Only \Leftrightarrow Be Neat & Organized

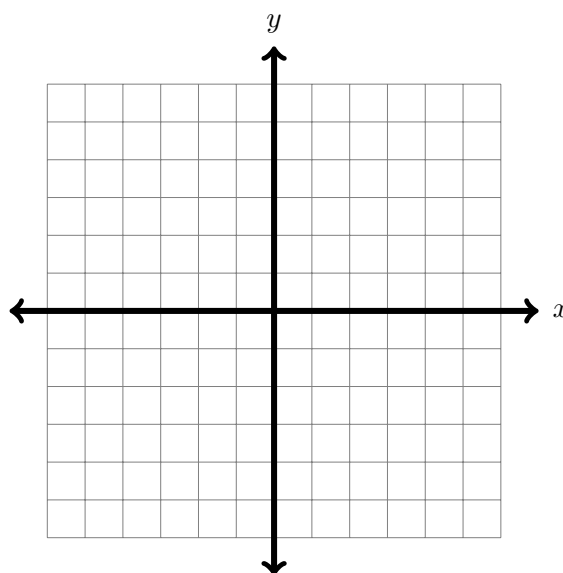
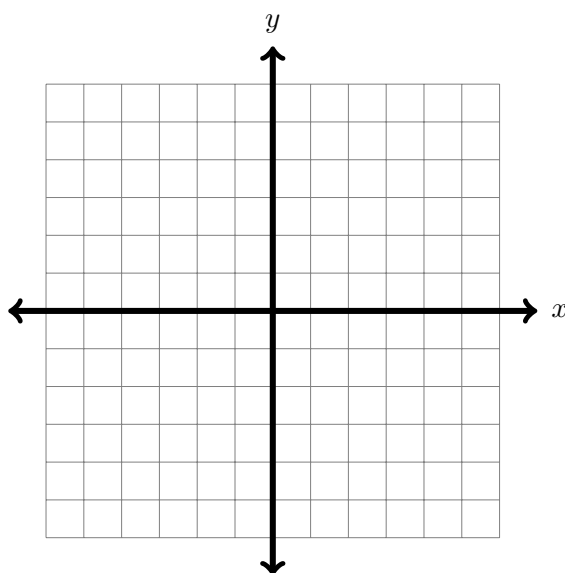
1. (3 points) Write $4x - 5y = 15$ in slope-intercept form, then express your answer in function notation.

1. _____

2. (8 points) Graph both linear functions in each system, clearly mark intercepts, rise and run of the slope, or any point used in the graph:

$$\begin{cases} f(x) = 2x - 3 \\ g(x) = 3 \end{cases}$$

$$\begin{cases} f(x) = \frac{2}{3}x - 2 \\ g(x) = \frac{-3}{2}x \end{cases}$$



3. Consider the function $f(x) = x^2 - 4$,

(a) (1 point) Find $f(0)$.

(a) _____

(b) (1 point) Find $f(-2)$.

(b) _____

(c) (3 points) Find the difference quotient $\frac{f(x+h) - f(x)}{h}$.

(c) _____

4. Consider the function $f(x) = \frac{x-4}{x+2}$,

(a) (2 points) Find $f(4)$.

(a) _____

(b) (2 points) Find $f(-2)$.

(b) _____

5. Consider the function $f(x) = |x-1| - 1$,

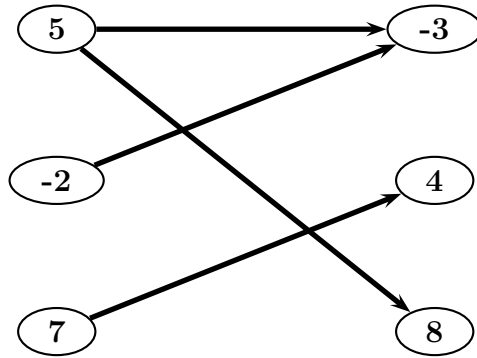
(a) (1 point) Find $f(0)$.

(a) _____

(b) (1 point) Find $f(2)$.

(b) _____

6. Consider the following relation:



(a) (2 points) Find its domain.

(a) _____

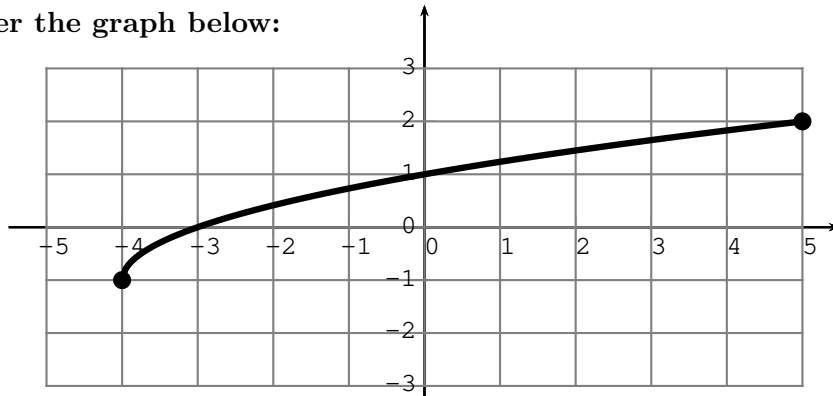
(b) (2 points) Find its range.

(b) _____

(c) (2 points) Is this relation a function? Justify your answer.

(c) _____

7. Consider the graph below:



(a) (2 points) Give its domain in interval notation.

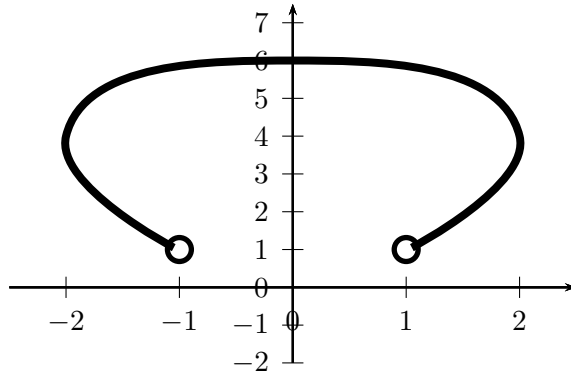
(a) _____

(b) (2 points) Give its range in interval notation.

(b) _____

(c) (2 points) Use the graphing area above to draw a new graph by shifting the given graph one unit left, then two units down.

8. Consider the graph below:



(a) (2 points) Give its domain in interval notation.

(a) _____

(b) (2 points) Give its range in interval notation.

(b) _____

(c) (2 points) Does this graph belong to a function? Justify your answer.

(c) _____

(d) (2 points) Give any y -intercept.

(d) _____

(e) (2 points) Give any x -intercept.

(e) _____

9. Algebra Review Problems:

(a) (2 points) Factor $3x^2 - 16x - 35$.

(a) _____

(b) (2 points) Solve $(3x + 5)(x - 7) = 0$ by using the zero-factor theorem.

(b) _____

(c) (2 points) Simplify $(3x - 5)^2 - (3x + 5)^2$.

(c) _____