Intermediate Algebra	Name:
Study Guide 2	Class:
Due Date:	Score:

No Work ⇔ No Points

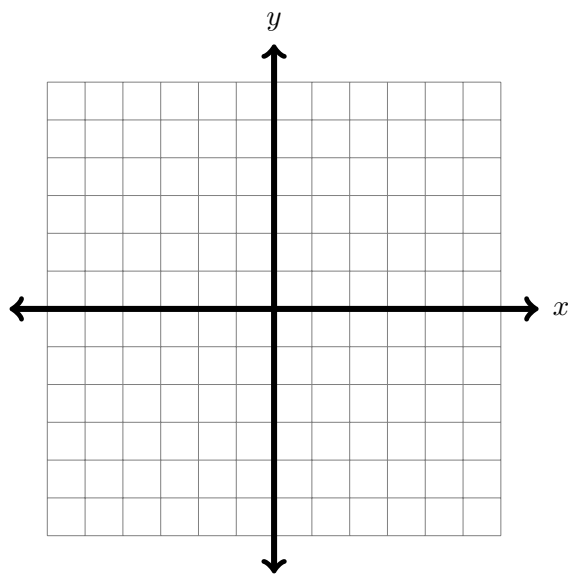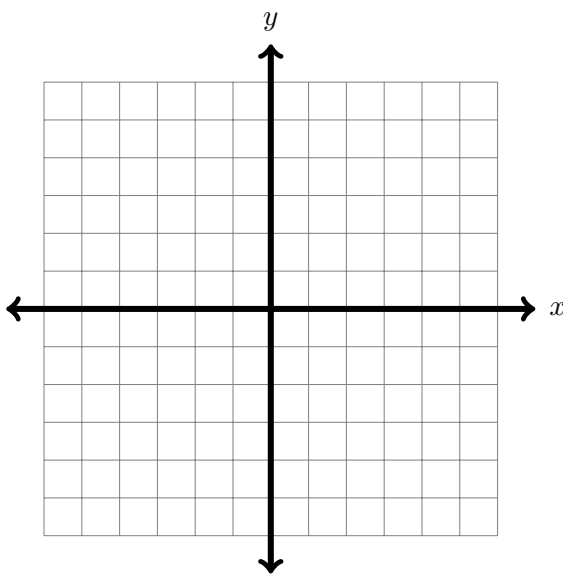**Use Pencil Only ⇔ Be Neat & Organized**

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:

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

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

3. **Consider the function** $f(x) = -2x^2 + 5x - 7,$

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

                                                        (a) _____

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

                                                        (b) _____

   (c) (2 points) Find $f(2x).$

                                                        (c) _____

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

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

                                                        (a) _____

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

                                                        (b) _____

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5. **Consider the function** $f(x) = |x-1| + 2,$

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

                                                        (a) _____

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

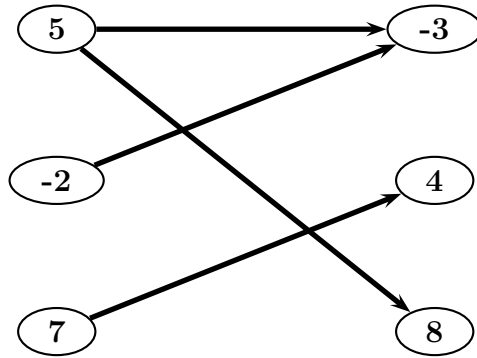   **(b)** _____

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6. Consider the following relation:

(a) **(2 points)** Find its domain.

                                                           (a) _____
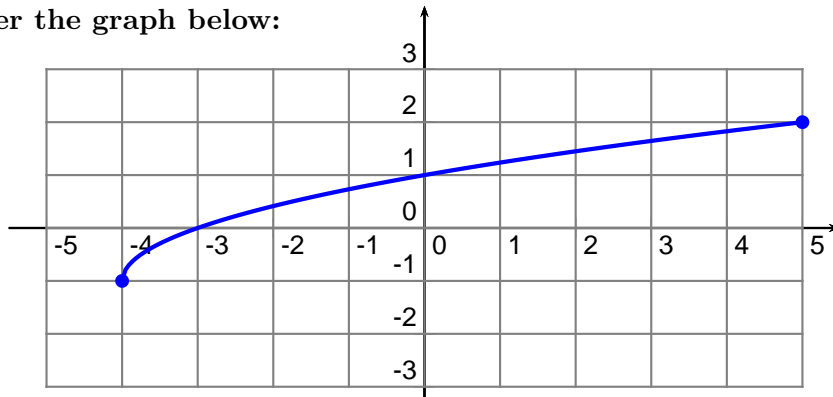
(b) **(2 points)** Find its range.

                                                           (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) _____

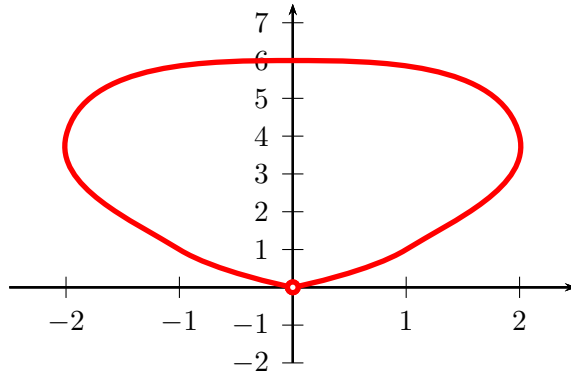(b) **(2 points)** Give its range in interval notation.

                                                           (b) _____

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

                                                           (c) _____

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. **Beginning Algebra Review Problems:**

(a) (**2 points**) Factor $x^2 - 2x - 24$.

(a) _____

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

(b) _____

(c) (**2 points**) Simplify $(3x - 5)^2 + 30x$.

(c) _____