College Algebra	Name:
Study Guide 6	Class:
Due Date:	Score:

No Work $\Leftrightarrow$ No Points

Use Pencil Only $\Leftrightarrow$ Be Neat & Organized

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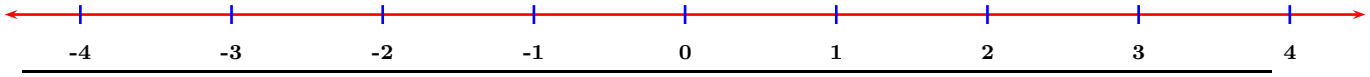
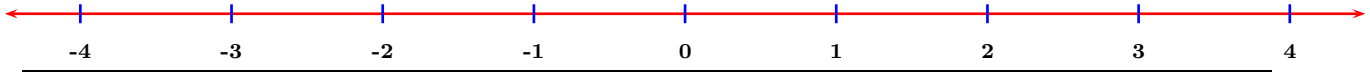
1. (3 points) Solve $(x+1)(x-2) > 0$, graph your final answer and in interval notation.

1. _____



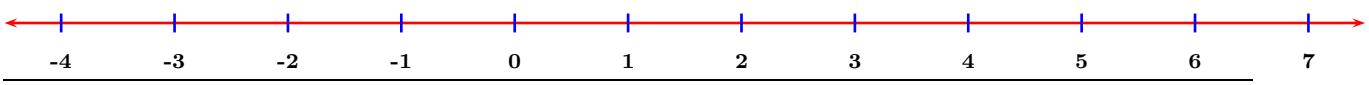
2. (3 points) Solve $\dfrac{x-2}{x+1} \leq 0$, graph your final answer and in interval notation.

2. _____



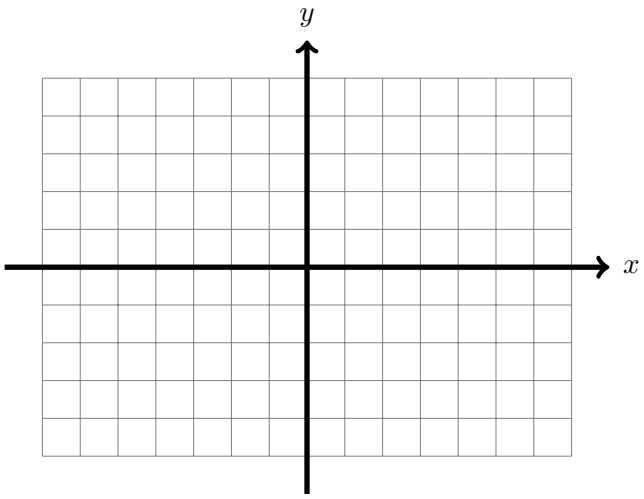
3. (4 points) Solve $\dfrac{x^2-2x-8}{x^2-9} < 0$, graph your final answer and in interval notation.

3. _____



4. (4 points) Graph and shade the solution for the system given below in the same coordinate system.
What do you conclude about the solution for this system of inequalities?

$$\begin{cases} y > \frac{2}{3}x + 2 \\ y \leq \frac{2}{3}x - 2 \end{cases}$$



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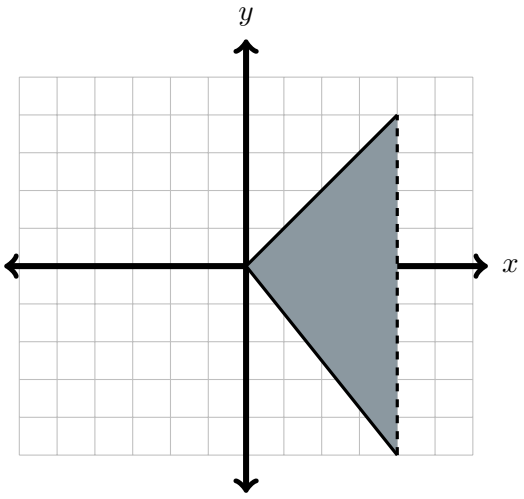
5. (4 points) Find a system of linear inequalities that satisfies the following shaded region.



5. _____

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6. (4 points) y **varies inversely as cube root of** x**.**
y **is 5 when** x **is** 8**. Find** y **when** x **is** 1000**.**

6. _____

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7. (4 points) y **varies directly as fourth power of** x**.** y **is 1250 when** x **is** 5**. Find** y **when** x **is** 4**.**

7. _____

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8. (5 points) The intensity of a light source varies inversely as the square of its distance from its source. If the intensity is 30 **lumens at the distance of** 2 **ft, Find its intensity when the distance is** 4 **feet.**

8. _____

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9. (4 points) Assume that y **varies directly as** z **and inversely as the cube of** x**.** y **is** 3 **when** z **is** 4 **and** x **is** 2**. Find** y **when** z **is** 2 **and** x **is** 4**.**

9. _____

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10. (4 points) The stopping distance of a car is directly proportional to the square root of its speed. If a car traveling at 36 mph has a stopping distance of 120 ft, Find the stopping distance of a car that is traveling at 64 mph. Round your answer to a whole number.

10. _____

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11. (5 points) Assume that z varies directly as the square root of the sum of x^2 and y^2. z is 10 when x is 4 and y is 3. Find z when x is 6 and y is 8.

11. _____

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12. Algebra Review Problems:

(a) (3 points) Solve $x^2 + 4x - 21 = 0$ by using the quadratic formula.

(a) _____

(b) (3 points) Solve $2x^2 - 7x + 5 = 0$ by using the quadratic formula.

(b) _____
