College Algebra	Name:
Study Guide 5	Class:
Due Date:	Score:

No Work ⇔ No Points

Use Pencil Only ⇔ Be Neat & Organized

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1. Algebra Review Problems:

(a) (3 points) Simplify: $\dfrac{x^3 - 27}{x^2 - 9}$

(a) _____

(b) (3 points) Simplify: $\dfrac{4x}{x^2 - 1} - \dfrac{x}{x^2 - x - 2}$

(b) _____

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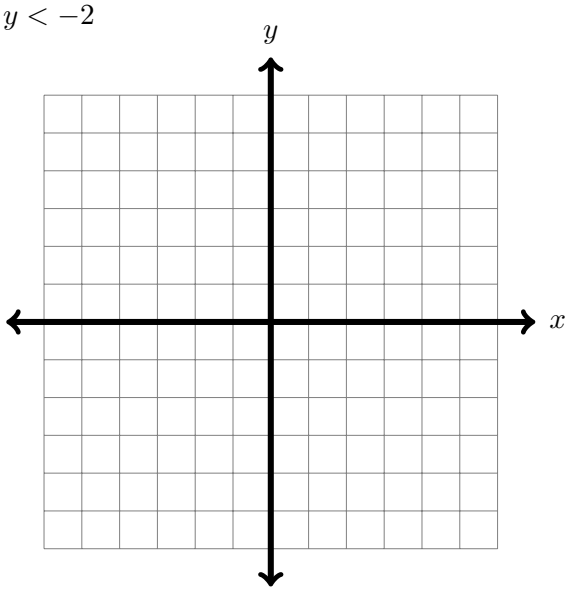
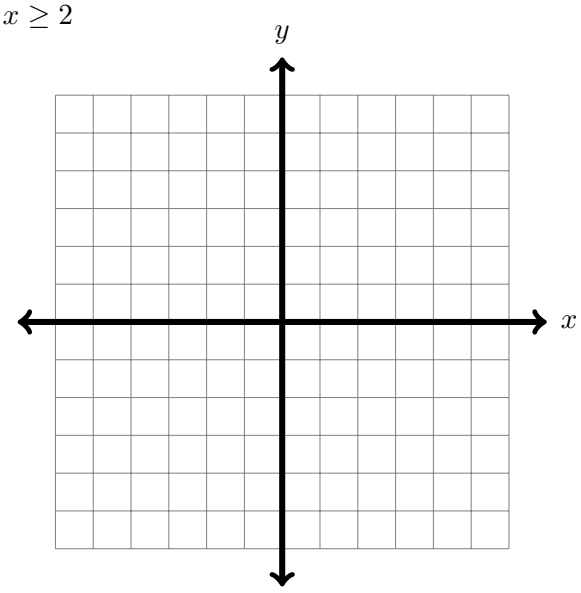
2. (4 points) Graph and shade the solution:

$y < -2$



$x \geq 2$



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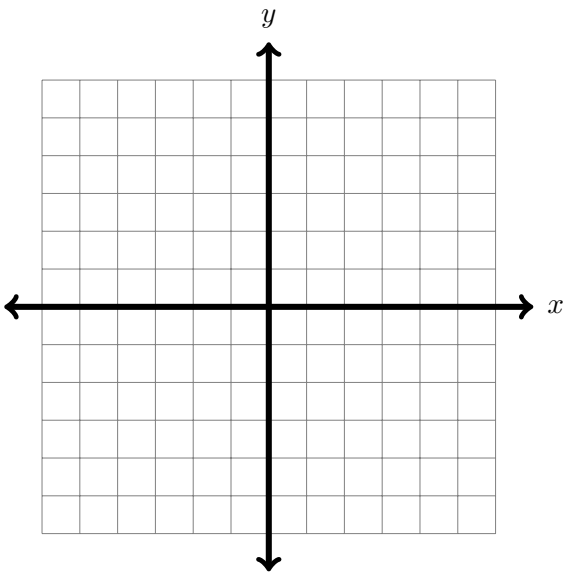
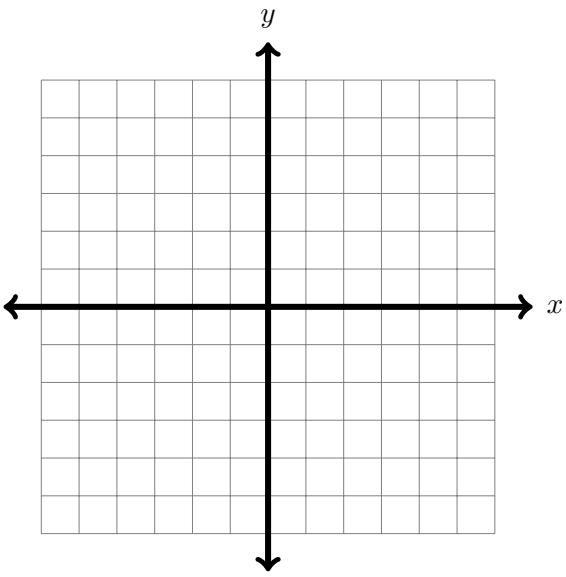
3. (4 points) Graph and shade the solution:

$y < \frac{-3}{4}x + 3$



$y \geq \frac{4}{3}x - 4$



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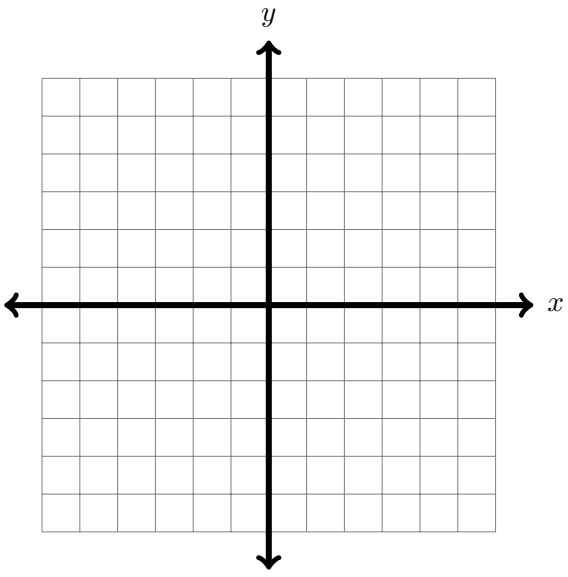
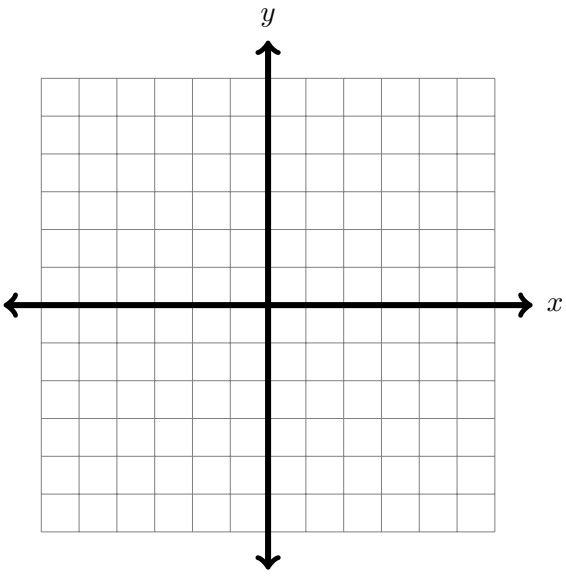
4. (5 points) Graph and shade the solution to each of the system of linear inequalities:

$$\begin{cases} y < \frac{-2}{3}x + 2 \\ x \geq -1 \end{cases}$$



$$\begin{cases} y \geq -2x + 3 \\ y \leq 1 \end{cases}$$



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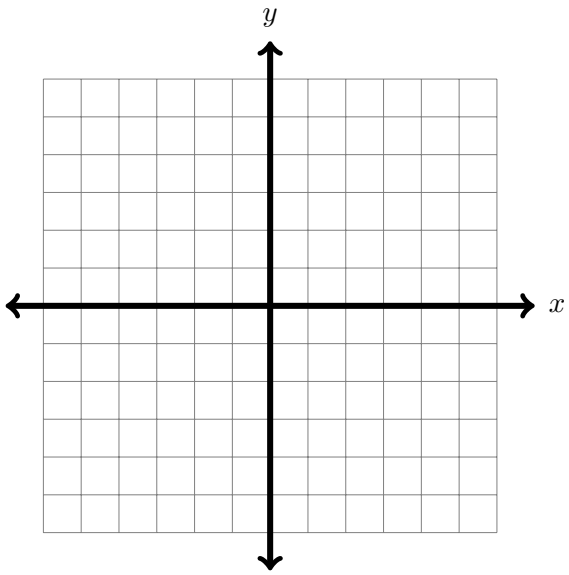
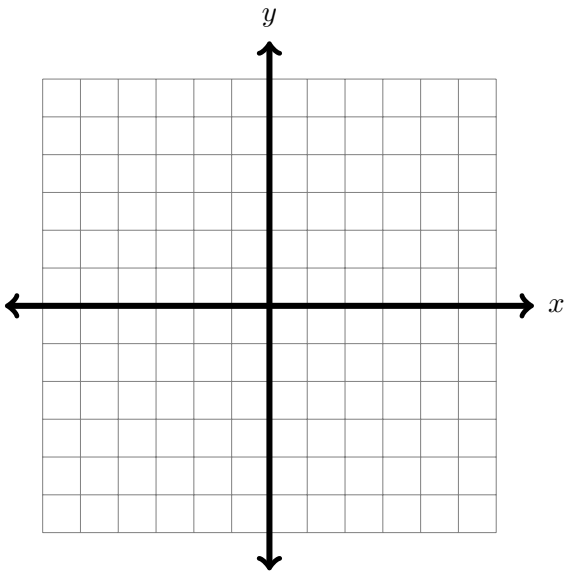
5. (8 points) Graph and shade the solution to each of the system of linear inequalities:

$$\begin{cases} y > \frac{2}{3}x - 2 \\ y > \frac{-2}{3}x - 2 \\ y \leq 2 \end{cases} \qquad \begin{cases} y \geq x - 4 \\ y \leq 0 \\ x \geq 0 \end{cases}$$





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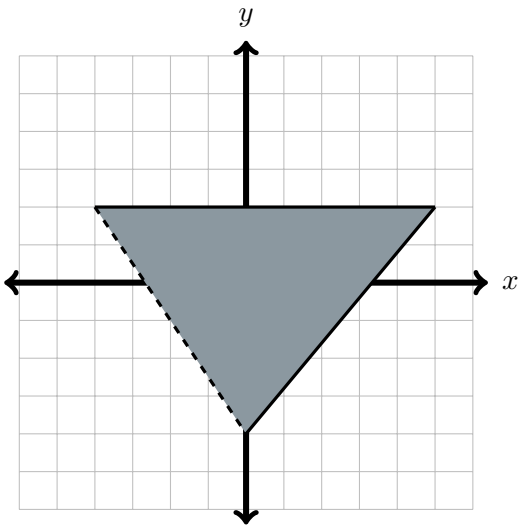
6. (5 points) Find a system of linear inequalities that satisfies the following shaded region.



6. _____

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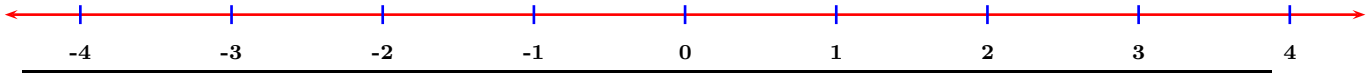
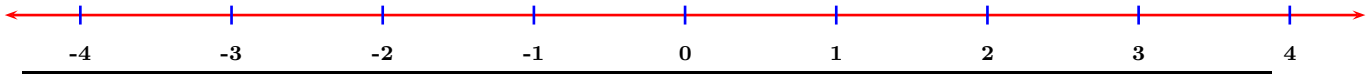
7. (3 points) Solve $(x-2)(x+3) \leq 0$, graph your final answer and in interval notation.

7. _____



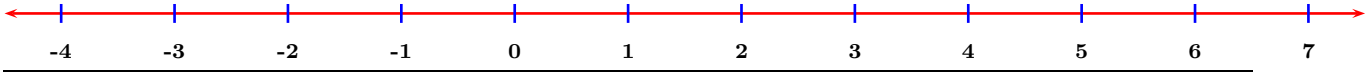
8. (5 points) Solve $x^2 - x \geq 6$, graph your final answer and in interval notation.

8. _____



9. (5 points) Solve $\dfrac{x+5}{x^2-4} \geq 0$, graph your final answer and in interval notation.

9. _____



10. (5 points) Solve $x^3 - 5x^2 \leq 4x - 20$, graph your final answer and in interval notation.

10. _____