College Algebra
Weekly Quiz 3

Name:_____

No Work $\Leftrightarrow$ No Points

Use Pencil Only $\Leftrightarrow$ Be Neat & Organized

1. **(4 points)** Solve by elimination method.

$$\begin{cases} x^2 - 5y^2 = 4 \\ 4x^2 + y^2 = 37 \end{cases}$$

1. _____

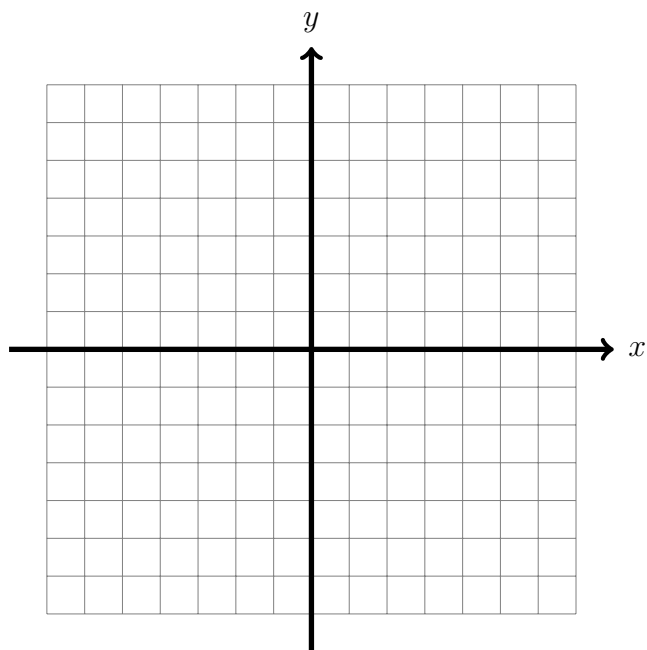2. **(4 points)** Solve by using the quadratic formula: $3x^2 - 4x - 7 = 0$

2. _____

3. **(4 points)** Use long division to divide $(3x^4 - 2x^3 - 5x + 1) \div (x^2 + 3)$. **Be aware of missing terms.**
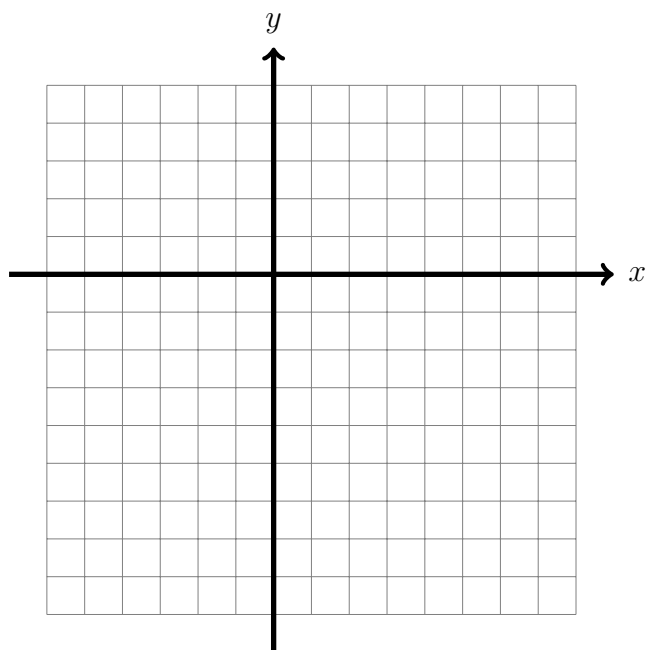
3. _____

4. **(4 points)** Graph and shade the solution for the system given below in the same coordinate system.

$$\begin{cases} x^2 + (y-1)^2 \leq 25 \\ y \leq 3 \\ x > -2 \end{cases}$$

5. **(5 points)** Graph and shade the solution for the system given below in the same coordinate system.

$$\begin{cases} 2x - y > 4 \\ 3x + y \geq 1 \end{cases}$$

6. (8 points) Solve:

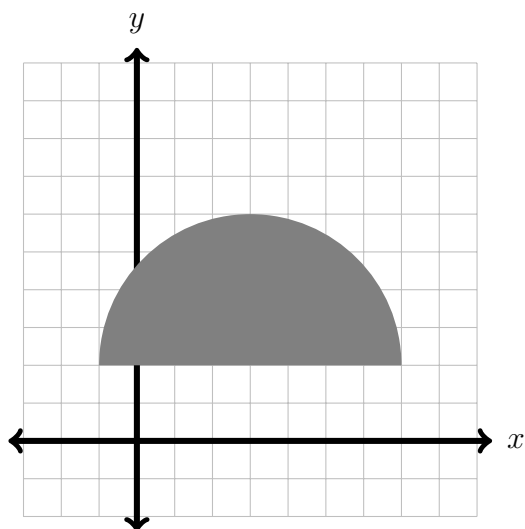$$\begin{cases} 3x - 4y + 2z = 5 \\ 5y - 3z = -12 \\ 7x + 2z = 1 \end{cases}$$

6. _____

7. (5 points) Find the partial composition decomposition: $\dfrac{8x - 27}{x^2 - 7x + 12}$

7. _____

8. (10 points) Find the partial composition decomposition: $\dfrac{x^4 + 2x^3 + 10x^2 + 8x + 12}{x^3 + 3x}$

8. _____

9. (6 points) Find a system of linear inequalities that satisfies the following shaded region.

9. _____

$\dfrac{x^4 + 2x^3 + 10x^2 + 8x + 12}{x^3 + 3x}$