

Name \_\_\_\_\_

Each problem is worth 5 point: 3-points for Work/Explanation and 2 points for the correct answer. Use another piece of paper to complete your work. Number the problems and box your answers. Partial credit will be awarded. Neatness counts. Single cross outs are ok.

Write and sign the Academic Honesty Statement below.

**Simplify.**

$$1) \frac{6 + \frac{1}{3}}{4 - \frac{2}{27}}$$

**Solve the equation.**

$$2) -3[3x - 7 + 4(x + 1)] = -6x + 7$$

**Solve using the substitution method.**

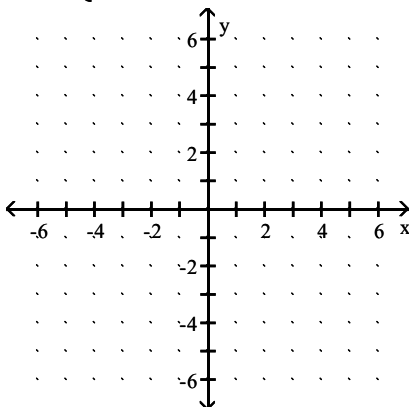
$$3) \begin{cases} y = 2x + 4 \\ 2x + y = 12 \end{cases}$$

**Find the requested value.**

$$4) \text{ Find } f(5) \text{ and } f(-4) \text{ for } f(x) = \begin{cases} x - 5, & \text{if } x < 6 \\ 6 - x, & \text{if } x \geq 6 \end{cases}$$

**Graph the function.**

$$5) f(x) = \begin{cases} x - 5 & \text{if } x > 0 \\ -3 & \text{if } x \leq 0 \end{cases}$$



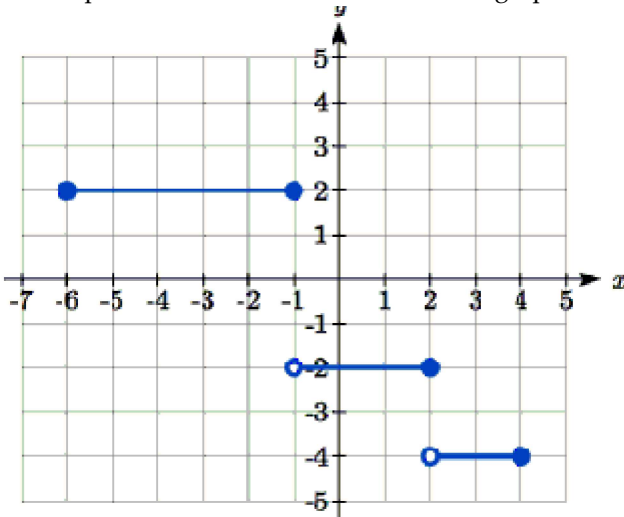
**Solve.**

- 6) Sales of frozen pizza for a club fund-raiser increased from 480 one year to 605 the next year. What was the percent of increase?

**Find the domain.**

7)  $f(x) = \frac{\sqrt{x+7}}{x+5}$

- 8) Write a piece-wise defined function for the graph below



**Factor the sum or difference of cubes.**

9)  $x^3 - 27$

**Find the average rate of change for the function over the given interval.**

10)  $y = \frac{3}{x-2}$  between  $x = 4$  and  $x = 7$