

Quiz 1

Name:

1. Find the domain of $f(x) = \frac{x-7}{(3x-1)(x+4)}$. (2 points)

$$3x-1 \neq 0 \quad x+4 \neq 0$$

$$x \neq \frac{1}{3} \quad x \neq -4$$

$$\text{or } \mathbb{R} \setminus \left\{ \frac{1}{3}, -4 \right\}$$

2. How has the graph of $f(x) = x^2$ been shifted to get $g(x) = 5(x+2)^2 - 4$? (2 points)

Shift left 2 units

expand by 5 units

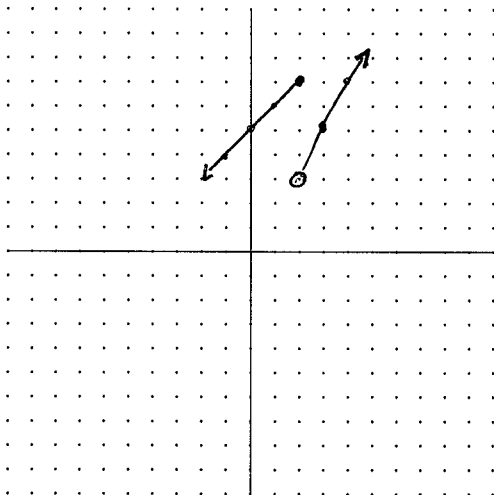
shift down 4 units

3. Let $f(x) = x^2 + 4x - 7$. Simplify $f(a+h) - f(a)$. (2 points)

$$(a+h)^2 + 4(a+h) - 7 - (a^2 + 4a - 7)$$

$$= 2ah + h^2 + 4h$$

4. Graph $f(x) = \begin{cases} 2x-1 & x > 2 \\ x+5 & x \leq 2 \end{cases}$ (4 points)



Quiz 2

Name:

Section:

Note: The first three problems **must** be done by hand. You have to show your work to get credit.

1. Find the line between the points (4, 1) and (-3, -1). (2 points)

$$m = \frac{2}{7} \quad y + 1 = \frac{2}{7}(x + 3)$$

$$\boxed{y = \frac{2}{7}x - \frac{1}{7}}$$

2. Find the intercepts of $2x - 3y = 24$. (2 points)

$$x\text{-int} \quad x = 12$$

$$y\text{-int} \quad y = -8$$

3. Find the smallest cost if the cost function equals $C(x) = 2x^2 - 52x + 500$. (2 points)

$$\frac{-b}{2a} = 13 \quad C(13) = 162$$

4. A train set can be bought in different packages (each package contains a different number of pieces). (4 points)

pieces	1	6	26	27	28	43
cost	12.52	19.67	24.67	26.96	39.50	41.75

- a. Find the linear function that best fits the cost of the train sets.

$$y = .6561x + 13.1859$$

- b. Find the quadratic function that best fits the cost of the train sets.

$$y = .0016x^2 + .5902x + 13.536$$