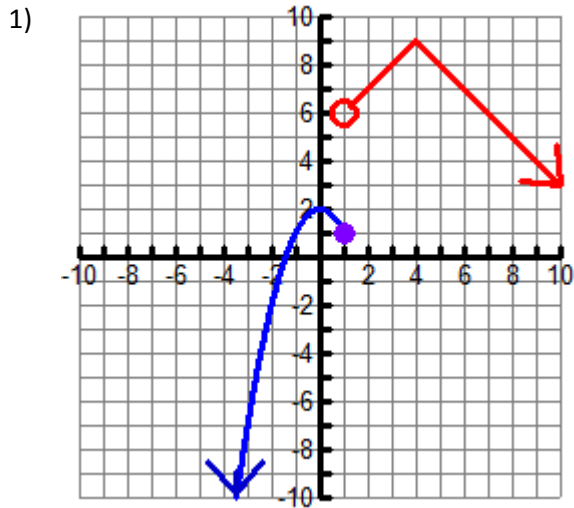


For #1-4, State the domain and range for the function, then determine for what values of the domain the function is increasing and decreasing.

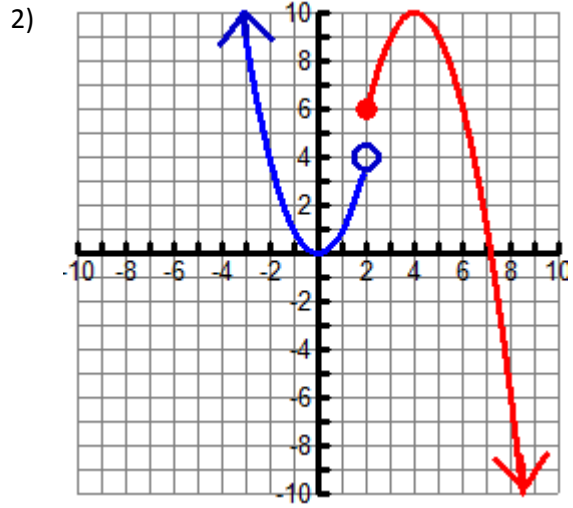


Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

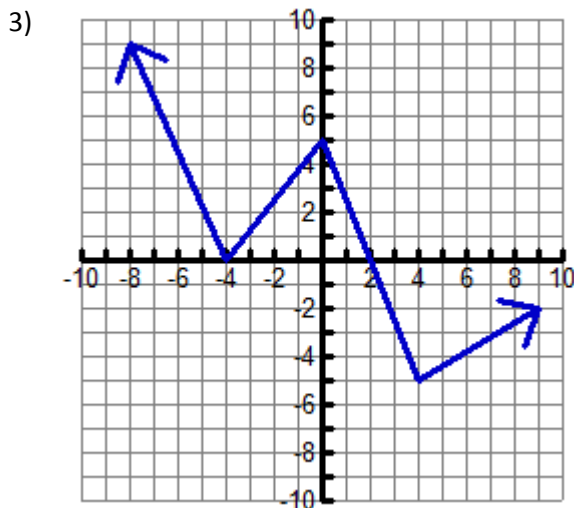


Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

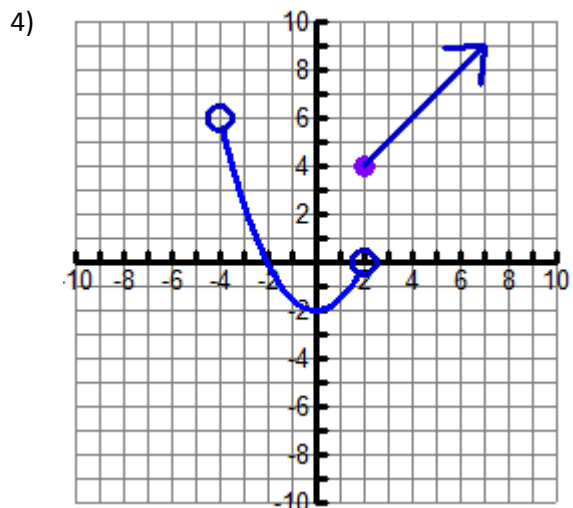


Domain: _____

Range: _____

Increasing: _____

Decreasing: _____



Domain: _____

Range: _____

Increasing: _____

Decreasing: _____

#5-10 Graph each of the following piecewise functions on a separate piece of graph paper.

$$5) f(x) = \begin{cases} 3x - 2 & x < -2 \\ x^2 - x + 4 & x \geq -2 \end{cases}$$

$$6) f(x) = \begin{cases} 3x + 3 & x \leq 0 \\ -x + 4 & 0 < x < 3 \\ x^2 & x \geq 3 \end{cases}$$

$$7) f(x) = \begin{cases} x - 2 & x < -2 \\ x^3 & -2 \leq x \leq 2 \\ 3x - 5 & x > 2 \end{cases}$$

$$8) f(x) = \begin{cases} 3x - 2 & x < -2 \\ -1 & -2 \leq x < 3 \\ x - 2 & 3 \leq x < 4 \\ 0 & x \geq 4 \end{cases}$$

$$9) f(x) = \begin{cases} -6 & x < 1 \\ 3x & 1 \leq x \leq 4 \\ 2x - x^2 & x > 4 \end{cases}$$

$$10) f(x) = \begin{cases} 3x - 1 & x < 0 \\ 2x^2 & 0 \leq x < 4 \\ 1 - x & x \geq 4 \end{cases}$$

11) You are a buyer for a grocery store and you are asked to purchase potatoes. The potato farmer tells you that if you buy up to 50 bushels of potatoes, you will pay \$40/bushel. Then for each bushel you purchase above 50 bushels, you will pay \$30/bushel.

a) How much will you pay in total if you decide to purchase 40 bushels? 60 bushels? 78 bushels? 105 bushels?

b) Write a piecewise function that represents the total amount of money that your grocery store will pay for the potatoes.