Evaluating Functions

Evaluate each function.

1) $f(x) = \begin{cases} -x^3 & ; \ x > 3 \\ x^2 - 1 & ; \ x < -5 \\ -x - 5 & ; \ -4 \le x \le 2 \end{cases}$

$f(-4) = $ _____ $f(-6) = $ _____

$f(5) = $ _____ $f(1) = $ _____

$f(-7) \times f(0) = $ _____

2) $f(x) = \begin{cases} -x + 7 & ; \ -1 \le x \le 2 \\ x^2 - x - 3 & ; \ x \le -2 \\ 11x & ; \ x \ge 4 \end{cases}$

$f(5) = $ _____ $f(2) = $ _____

$f(-3) = $ _____ $f(-4) = $ _____

$3f(0) - 3f(-1) = $ _____

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

$f(8) = $ _____ $f(-1) = $ _____

$f(-9) = $ _____ $f(10) = $ _____

$f(15) - f(-5) = $ _____

4) $f(x) = \begin{cases} 2(4 - x) & ; \ -7 < x \le -1 \\ 6x & ; \ x < -8 \\ 3 - x^2 & ; \ x \ge 0 \end{cases}$

$f(-13) = $ _____ $f(4) = $ _____

$f(-6) = $ _____ $f(3) = $ _____

$2f(-1) + 4f(0) = $ _____

5) $f(x) = \begin{cases} 2x - 1 & ; \ x > 5 \\ \dfrac{x - 5}{4} & ; \ x < -2 \\ x^2 + x + 6 & ; \ -1 \le x \le 3 \end{cases}$

$f(9) = $ _____ $f(2) = $ _____

$f(0) = $ _____ $f(-11) = $ _____

$2f(-9) + f(-1) = $ _____

6) $f(x) = \begin{cases} x^3 + x^2 + 1 & ; \ x \ge 0 \\ 1 - \dfrac{x}{2} & ; \ -6 < x < -1 \\ x - 10 & ; \ x < -8 \end{cases}$

$f(1) = $ _____ $f(-4) = $ _____

$f(-14) = $ _____ $f(0) = $ _____

$f(2) \div f(-16) = $ _____

Evaluating Functions

Name _____

Score _____

Answer key

Evaluate each function.

1) $f(x) = \begin{cases} -x^3 & ; \ x > 3 \\ x^2 - 1 & ; \ x < -5 \\ -x - 5 & ; \ -4 \le x \le 2 \end{cases}$

$f(-4) = $ **−1** $f(-6) = $ **35**

$f(5) = $ **−125** $f(1) = $ **−6**

$f(-7) \times f(0) = $ **−240**

2) $f(x) = \begin{cases} -x + 7 & ; \ -1 \le x \le 2 \\ x^2 - x - 3 & ; \ x \le -2 \\ 11x & ; \ x \ge 4 \end{cases}$

$f(5) = $ **55** $f(2) = $ **5**

$f(-3) = $ **9** $f(-4) = $ **17**

$3f(0) - 3f(-1) = $ **−17**

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

$f(8) = $ **4** $f(-1) = $ **1**

$f(-9) = $ **72** $f(10) = $ **6**

$f(15) - f(-5) = $ **−9**

4) $f(x) = \begin{cases} 2(4 - x) & ; \ -7 < x \le -1 \\ 6x & ; \ x < -8 \\ 3 - x^2 & ; \ x \ge 0 \end{cases}$

$f(-13) = $ **−78** $f(4) = $ **−13**

$f(-6) = $ **20** $f(3) = $ **−6**

$2f(-1) + 4f(0) = $ **32**

5) $f(x) = \begin{cases} 2x - 1 & ; \ x > 5 \\ \dfrac{x - 5}{4} & ; \ x < -2 \\ x^2 + x + 6 & ; \ -1 \le x \le 3 \end{cases}$

$f(9) = $ **17** $f(2) = $ **12**

$f(0) = $ **6** $f(-11) = $ **−4**

$2f(-9) + f(-1) = $ **−1**

6) $f(x) = \begin{cases} x^3 + x^2 + 1 & ; \ x \ge 0 \\ 1 - \dfrac{x}{2} & ; \ -6 < x < -1 \\ x - 10 & ; \ x < -8 \end{cases}$

$f(1) = $ **3** $f(-4) = $ **3**

$f(-14) = $ **−24** $f(0) = $ **1**

$f(2) \div f(-16) = $ **$-\dfrac{1}{2}$**