Evaluating Functions

Evaluate each function.

1) $f(x) = \begin{cases} x^2 + x + 4 & ; -10 < x < 4 \\ \dfrac{x+3}{3} & ; x < -11 \\ 5x - 6 & ; x \geq 4 \end{cases}$

f(−1) = _____   f(8) = _____

f(−12) = _____   f(2) = _____

f(5) + f(−9) = _____

2) $f(x) = \begin{cases} 2(x - 1) & ; x \leq 1 \\ x(x + 2) & ; x > 9 \\ -3x^3 & ; 2 < x \leq 5 \end{cases}$

f(−6) = _____   f(−10) = _____

f(15) = _____   f(4) = _____

f(3) ÷ f(−2) = _____

3) $f(x) = \begin{cases} 5x & ; -1 < x < 8 \\ x^2 + 1 & ; x > 8 \\ x^3 - x - 2 & ; x < -3 \end{cases}$

f(7) = _____   f(−4) = _____

f(11) = _____   f(0) = _____

f(9) − 3f(2) = _____

4) $f(x) = \begin{cases} x^3 + 2 & ; x \geq -5 \\ \dfrac{x}{4} - 5 & ; x = -6 \\ x^2 - 2x + 1 & ; -11 \leq x \leq -7 \end{cases}$

f(−11) = _____   f(−2) = _____

f(2) = _____   f(−7) = _____

f(−6) × f(−1) = _____

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

f(−3) = _____   f(18) = _____

f(−5) = _____   f(1) = _____

5f(−4) ÷ f(4) = _____

6) $f(x) = \begin{cases} x^2(x - 2) & ; 3 < x < 8 \\ -7x & ; x > 11 \\ 4x - 11 & ; x < 1 \end{cases}$

f(6) = _____   f(−1) = _____

f(−8) = _____   f(14) = _____

4f(12) + 2f(−6) = _____

Evaluating Functions

Answer key

Name _____

Score _____

Evaluate each function.

1) $f(x) = \begin{cases} x^2 + x + 4 & ; -10 < x < 4 \\ \dfrac{x+3}{3} & ; x < -11 \\ 5x - 6 & ; x \geq 4 \end{cases}$

f(−1) = **4**   f(8) = **34**

f(−12) = **−3**   f(2) = **10**

f(5) + f(−9) = **95**

2) $f(x) = \begin{cases} 2(x - 1) & ; x \leq 1 \\ x(x + 2) & ; x > 9 \\ -3x^3 & ; 2 < x \leq 5 \end{cases}$

f(−6) = **−14**   f(−10) = **−22**

f(15) = **255**   f(4) = **−192**

f(3) ÷ f(−2) = **$-\dfrac{27}{2}$**

3) $f(x) = \begin{cases} 5x & ; -1 < x < 8 \\ x^2 + 1 & ; x > 8 \\ x^3 - x - 2 & ; x < -3 \end{cases}$

f(7) = **35**   f(−4) = **−62**

f(11) = **122**   f(0) = **0**

f(9) − 3f(2) = **52**

4) $f(x) = \begin{cases} x^3 + 2 & ; x \geq -5 \\ \dfrac{x}{4} - 5 & ; x = -6 \\ x^2 - 2x + 1 & ; -11 \leq x \leq -7 \end{cases}$

f(−11) = **144**   f(−2) = **−6**

f(2) = **10**   f(−7) = **64**

f(−6) × f(−1) = **$-\dfrac{27}{2}$**

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

f(−3) = **27**   f(18) = **85**

f(−5) = **75**   f(1) = **0**

5f(−4) ÷ f(4) = **16**

6) $f(x) = \begin{cases} x^2(x - 2) & ; 3 < x < 8 \\ -7x & ; x > 11 \\ 4x - 11 & ; x < 1 \end{cases}$

f(6) = **144**   f(−1) = **−15**

f(−8) = **−43**   f(14) = **−98**

4f(12) + 2f(−6) = **−371**

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