

Pre-Algebra  
Variables, Expressions, and Integers  
Example 3

Order of Operations

Evaluate the following expressions:

1.  $6[20 + 13(6-2)]$

$$\begin{aligned} 1. & 6[20 + 13(6-2)] \\ &= 6[20 + 13(4)] \\ &= 6[20 + 52] \\ &= 6[72] \\ &= \underline{\underline{432}} \end{aligned}$$

2.  $18 + 24 - 6^2$

$$\begin{aligned} 2. & 18 + 24 - 6^2 \\ &= 18 + 24 - 36 \\ &= 42 - 36 \\ &= \underline{\underline{6}} \end{aligned}$$

3.  $18(18 \div 3^2)$

$$\begin{aligned} 3. & 18(18 \div 3^2) \\ &= 18\left(\frac{18}{3^2}\right) \\ &= 18\left(\frac{18}{9}\right) \\ &= 18(2) \\ &= \underline{\underline{36}} \end{aligned}$$

Evaluate the expression when  $x = 4$

1.  $14 + 9(20 - x^2)$

$$\begin{aligned} 1. & 14 + 9(20 - x^2) \\ &= 14 + 9(20 - 4^2) \\ &= 14 + 9(20 - 16) \\ &= 14 + 9(4) \\ &= 14 + 36 \\ &= \underline{\underline{50}} \end{aligned}$$

2.  $\frac{28 - x}{2^3}$

$$\begin{aligned} 2. & \frac{28 - x}{2^3} \\ &= \frac{28 - 4}{2^3} \\ &= \frac{28 - 4}{8} \\ &= \frac{24}{8} \\ &= \underline{\underline{3}} \end{aligned}$$

3.  $(2^x + 20) + (15 - x)2$

$$\begin{aligned} 3. & (2^x + 20) + (15 - x)2 \\ &= (2^4 + 20) + (15 - 4)2 \\ &= (16 + 20) + (15 - 4)2 \\ &= 36 + (15 - 4)2 \\ &= 36 + (11)2 \\ &= 36 + 22 \\ &= \underline{\underline{48}} \end{aligned}$$

You go to the store and buy 2 Videos Games for \$15.99 each and 3 DVDs for \$4.99 each. Find the total cost for your trip.

$$\begin{aligned}\text{TOTAL COST} &= 2(15.99) + 3(4.99) \\ &= 46.95\end{aligned}$$

$$\boxed{\$46.95}$$