

10-02-18

Aim: SWBAT evaluate variable expressions step-by-step.

HW: Packet Page 57 (No calculator)

Review Packet due tomorrow

Test Thursday

Do Now: Correct hw

## HOMEWORK - ORDER OF OPERATIONS

Evaluate each expression.

$$1) 12 - (3 \cdot 3)$$

$$12 - 9$$

$$3$$

$$2) 9 - (4 \div 2)$$

$$9 - 2$$

$$7$$

$$3) \frac{16}{11-3} \rightarrow \frac{16}{8} \rightarrow 2$$

$$4) 6 \cdot 3 + (9 - 7)$$

$$(6 \cdot 3) + 2$$

$$18 + 2$$

$$20$$

$$5) 5 \cdot [24 \div (5 + 3)] - 11$$

$$5 \cdot (24 \div 8) - 11$$

$$(5 \cdot 3) - 11$$

$$15 - 11$$

$$4$$

$$6) (7 \times 8) + 63 \div 9$$

$$56 + (63 \div 9)$$

$$56 + 7$$

$$63$$

$$7) (-8 \cdot 5) - 12$$

$$-40 - 12$$

$$-52$$

$$8) \frac{-24}{9-5} \rightarrow \frac{-24}{4} \rightarrow -6$$

$$9) (-6 \times 8) - 7 \times 4$$

$$-48 - (7 \times 4)$$

$$-48 - 28$$

$$-76$$

$$10) 18 - (3 \cdot 5) + 2$$

$$(18 - 15) + 2$$

$$3 + 2$$

$$5$$

$$11) (6 - 2^2) \cdot -5$$

$$(6 - 4) \cdot -5$$

$$2 \cdot -5$$

$$-10$$

$$12) [21 - (3 \cdot 7)] + 6$$

$$[21 - 21] + 6$$

$$0 + 6$$

$$6$$

$$13) (3^2 + 3) \times 3 + 5$$

$$(9 + 3) \times 3 + 5$$

$$(12 \times 3) + 5$$

$$36 + 5$$

$$41$$

$$14) (20 \div -5) + (8 \cdot 7)$$

$$-4 + (8 \cdot 7)$$

$$-4 + 56$$

$$52$$

$$15) 28 \div 4 \cdot (6 - 5)$$

$$(28 \div 4) \cdot 1$$

$$7 \cdot 1$$

$$7$$

Add parentheses <sup>es</sup> to make the statement true.

$$16) (7 + 3) \times 4 - 1 = 39$$

$$17) 3 \times (6 - 1) + 2 = 17$$

$$18) (9 - 4 + 2) \cdot 7 = 49$$

$$19) (6 - 3) \cdot (7 + 4) = 33$$

AIM: SWBAT evaluate variable expressions step-by-step.

DO NOW: Evaluate

$$1) \frac{4}{5} + \frac{12}{25} \cdot \frac{15}{28}$$

$$\frac{4}{5} + \frac{9}{35}$$

$$\frac{28}{35} + \frac{9}{35}$$

$$\frac{37}{35}$$

$$2) -2.3(5.62 - 2.8 + 11.35)$$

$$-2.3(2.82 + 11.35)$$

$$-2.3(14.17)$$

$$-30.291$$

$$-32.591$$

$$\begin{array}{r} 4 \text{ } 16 \\ 8.62 \\ - 2.8 \\ \hline 2.82 \end{array}$$

$$\begin{array}{r} 11.35 \\ + 2.82 \\ \hline 14.17 \\ \times 2.3 \\ \hline 42.51 \\ + 2834x \\ \hline 30.291 \end{array}$$

$$3) 3\frac{3}{4} + (8.8 \div 4)$$

$$3.75 + 2.2$$

$$5.95$$

$$\begin{array}{r} 3.75 \\ + 2.2 \\ \hline 5.95 \end{array}$$

**CLASSWORK:**

When evaluating variable expressions:

- 1) Rewrite the expression (when necessary)
- 2) Substitute the variable(s)
- 3) Evaluate step-by-step using the correct order of operations (P-E-MD-AS)

Evaluate each expression if  $a = 3$ ,  $b = -4$ ,  $c = -8$

1)  $-b + ac$

$$-(-4) + 3(-8)$$

$$4 + 3(-8)$$

$$4 - 24$$

$$-20$$

2)  $c^2$

$$(-8)^2$$

$$64$$

3)  $ab - c^2$

$$3(-4) - (-8)^2$$

$$3(-4) - 64$$

$$-12 - 64$$

$$-76$$

4)  $2a - 3b$

$$2(3) - 3(-4)$$

$$6 - (-12)$$

$$18$$

Evaluate each expression if  $a = 3$ ,  $b = -4$ ,  $c = -8$

5)  $b - c$   
 $-4 - (-8)$   
 $4$

6)  $b(a - c)$   
 $-4(3 - (-8))$   
 $-4(24)$   
 $-96$

7)  $-5abc$   
 $(-5)(3)(-4)(-8)$   
 $-480$

6)  $\frac{bc}{a-11}$   
 $\rightarrow \frac{(-4)(-8)}{3-11}$   
 $\rightarrow \frac{32}{-8}$   
 $\rightarrow -4$

Evaluate each expression if  $a = 8$ ,  $b = 1.5$ ,  $c = -\frac{3}{5}$ ,  $d = -10$

1)  $-a + bd$   
 $-8 + (1.5)(-10)$   
 $-8 - 15$   
 $-23$

2)  $c^2$   
 $(-\frac{3}{5})^2$   
 $\frac{3}{5} \cdot \frac{3}{5} = \frac{9}{25}$   
 $\frac{9}{25}$

3)  $-d - 5a$   
 $-(-10) - 5(8)$   
 $10 - 5(8)$   
 $10 - 40$   
 $-30$

4)  $\frac{1}{4}a - \frac{2}{5}d$   
 $\frac{1}{4} \cdot 8 - \frac{2}{5} \cdot -10$   
 $2 - \frac{2}{5} \cdot -10$   
 $2 + 4$   
 $6$

5)  $c + b$   
 $-\frac{3}{5} + 1.5$   
 $-0.6 + 1.5$   
 $0.9$

6)  $b(d - a)$   
 $1.5(-10 - 8)$   
 $1.5(-18)$   
 $-27$

7)  $bcd$   
 $(1.5)(-\frac{3}{5})(-10)$   
 $(1.5)(6)$   
 $9$

8)  $\frac{8d+5}{b}$   
 $\rightarrow \frac{8(-10)+5}{1.5}$   
 $\rightarrow \frac{-80+5}{1.5}$   
 $\rightarrow \frac{-75}{1.5}$   
 $\rightarrow -50$

9)  $-35c + d^2$   
 $-35 \cdot -\frac{3}{5} + (-10)^2$   
 $-35 \cdot -\frac{3}{5} + 100$   
 $21 + 100$   
 $121$

## HOMEWORK - EVALUATE VARIABLE EXPRESSIONS

Evaluate the following expressions if  $w = -0.5$ ,  $x = 2$ ,  $y = -3$  and  $z = \frac{2}{3}$

Remember to:

- 1) Rewrite (when necessary)
- 2) Substitute
- 3) Evaluate

1)  $w - y + x$

2)  $2x - 3z$

3)  $\frac{4xy}{w}$

Evaluate the following expressions if  $w = -0.5$ ,  $x = 2$ ,  $y = -3$  and  $z = \frac{2}{3}$

4)  $-15z - 4y$

5)  $wyz$

6)  $-y - xw$

7)  $\frac{6w+x}{y-1}$

8)  $(x^2y) \div z$