

Notes-Day 4: Evaluating an Expression

Date _____ Period _____

1) a) Replace each letter in the expression with the assigned value. First, replace each letter in the expression with the value that has been assigned to it. ...

b) Perform the operations in the expression using the correct order of operations.

*12h
h=10
*12 · 10 = 120

Evaluate each using the values given. You must rewrite the equation after substituting in the value for the letter. Each problem must show at least two steps. NO CALCULATORS!

2) $n - p - 1$; use $n = 3$, and $p = 1$

$$\begin{array}{l} \downarrow \quad \downarrow \\ 3 - 1 - 1 \\ \quad \downarrow \\ \quad 2 - 1 \\ \quad \quad \textcircled{1} \end{array}$$

3) $y - (z - x)$; use $x = 3$, $y = 2$, and $z = 3$

$$\begin{array}{l} \downarrow \quad \downarrow \quad \downarrow \\ 2 - (3 - 3) \\ \quad \downarrow \\ \quad 2 - 0 \\ \quad \quad \textcircled{2} \end{array}$$

4) $b + c - c$; use $b = 4$, and $c = 2$

$$\begin{array}{l} 4 + 2 - 2 \\ \quad \downarrow \\ \quad 6 - 2 \\ \quad \quad \textcircled{4} \end{array}$$

5) $m + p + n$; use $m = 1$, $n = 1$, and $p = 4$

$$\begin{array}{l} 1 + 4 + 1 \\ \quad \downarrow \\ \quad 5 + 1 \\ \quad \quad \textcircled{6} \end{array}$$

6) $k + 4 - (k - j)$; use $j = 1$, and $k = 3$

$$\begin{array}{l} 3 + 4 - (3 - 1) \\ \downarrow \quad \downarrow \\ 3 + 4 - (2) \\ \quad \downarrow \\ \quad 7 - 2 \\ \quad \quad \textcircled{5} \end{array}$$

7) $y^2 z + z$; use $y = 2$, and $z = 5$

$$\begin{array}{l} \downarrow \\ 2^2 \cdot 5 + 5 \\ \quad \downarrow \\ \quad 4 \cdot 5 + 5 \\ \quad \quad \downarrow \\ \quad \quad 20 + 5 \\ \quad \quad \quad \textcircled{25} \end{array}$$

8) $x(z - (y - 4))$; use $x = 5$, $y = 4$, and $z = 4$

$$\begin{array}{l} 5(4 - (4 - 4)) \\ 5(4 - 0) \\ 5(4) \\ \quad \textcircled{20} \end{array}$$

9) $3r - q^2$; use $q = 1$, and $r = 6$

$$\begin{array}{l} 36 - 1^2 \\ 3 \cdot 6 - 1 \\ \quad \downarrow \\ \quad 18 - 1 \\ \quad \quad \textcircled{17} \end{array}$$

10) $y \bullet (x + x) \div 6$; use $x = -3$, and $y = 4$

$$4 \bullet (-3) + (-3) \div 6$$

$$4 \bullet (-6) \div 6$$

$$-24 \div 6$$

$$\boxed{-4}$$

$$(-3)^2 = (-3)(-3)$$

12) $k + hkh^2$; use $h = -3$, and $k = -2$

$$(-2) + (-3)(-2)(-3)^2$$

$$(-2) + (-3)(-2)(9)$$

$$-2 + (6)(9)$$

$$-2 + 54$$

$$\boxed{52}$$

14) $-6 \bullet \frac{a+6-c}{2}$; use $a = 5$, and $c = 1$

$$-6 \bullet \frac{5+6-1}{2}$$

$$-6 \bullet \frac{11-1}{2}$$

$$-6 \bullet \frac{10}{2}$$

$$-6 \bullet 5$$

$$\boxed{-30}$$

16) $-\frac{r}{p}$; use $p = -3\frac{1}{2}$, and $r = -3\frac{1}{3}$

$$-\frac{-3\frac{1}{3}}{-3\frac{1}{2}} = -\left(\frac{-\frac{10}{3}}{\frac{-7}{2}}\right)$$

$$= -\left(-\frac{10}{3}\right) \div \left(\frac{-7}{2}\right)$$

$$= -\left(-\frac{10}{3}\right) \cdot \left(\frac{2}{-7}\right) = \boxed{-\frac{20}{21}}$$

11) $z \bullet x + 4 + y$; use $x = -4$, $y = 1$, and $z = -4$

$$(-4)(-4) \div 4 + 1$$

$$16 \div 4 + 1$$

$$4 + 1$$

$$\boxed{5}$$

13) $\frac{r(p - (-4 - p))}{2}$; use $p = -3$, and $r = -5$

$$\frac{(-5)(-3 - (-4 + (-3)))}{2} = \frac{(-5)(-3 + (-1))}{2}$$

$$= \frac{(-5)(-2)}{2}$$

$$= \frac{10}{2}$$

$$\boxed{5}$$

15) $r - 3q - 1 - r$; use $q = -5$, and $r = -6$

$$(-6) - 3(-5) - 1 - (-6)$$

$$-6 + 15 - 1 + 6$$

$$9 - 1 + 6$$

$$8 + 6$$

$$\boxed{14}$$

17) $m - 1 + n$; use $m = -3\frac{1}{4}$, and $n = 2\frac{3}{4}$

$$-3\frac{1}{4} - 1 + 2\frac{3}{4}$$

$$-\frac{13}{4} - 1 + \frac{11}{4}$$

$$-\frac{13}{4} - \frac{4}{4} + \frac{11}{4} = \text{---}$$

$$-\frac{17}{4} + \frac{11}{4} = -\frac{6}{4} = \boxed{-\frac{3}{2}}$$

- 18) The price Regina pays to visit the vet's clinic is calculated according to the formula $20 + 50n$. Here n is the number of times she visits him in a year. This time it was 2. What was the cost of his visit?

$$\begin{aligned} & \$20 + \$50n \\ & 20 + 50(2) \\ & 20 + 100 \\ & \$120 \end{aligned}$$

- 19) The expression $12g$, tells the number of miles a car can travel using g liters of gasoline. How far can this car travel on 27 litres of gasoline?

$$\begin{aligned} & 12g \quad g = 27 \\ & 12(27) \\ & = 324 \text{ miles.} \end{aligned}$$

- 20) What is the amount of money Hilly receives in a week for mowing lawns if she gets $5w + 12$, where w is \$10?

$$\begin{aligned} & 5w + 12, \quad w = 10 \\ & 5(10) + 12 \\ & 50 + 12 \\ & \$62 \end{aligned}$$