

Pre-Algebra PRACTICE Test (Chapters 1-3)

**Instructions: Show work clearly. Circle final answer. NO CALCULATOR ALLOWED.**

**Write each as an algebraic expression. Use the variable "n" to describe the number. Do NOT evaluate. (2 points each)**

1) the difference of m and 9

$m - 9$

2) the quotient of q and 4 is 12

$\frac{q}{4} = 12$

3) v cubed is greater than 10

$v^3 > 10$

**Evaluate each expression. (2 points each) CLEARLY SHOW WORK**

4)  $-12 \div ((5 - 8) \cdot -1)$

-4

$-12 \div (-3 \cdot -1) =$   
 $-12 \div 3 =$   
 $-4$

Go DOWN

5)  $(3 + 2 - (-9 + 4)) \div 5$

2

Order of ops  
 1) ()'s  
 IN  $\rightarrow$  OUT  
 2) EXPONENTS  
 3)  $\times, \div$  L  $\rightarrow$  R  
 4)  $+, -$  L  $\rightarrow$  R

**Evaluate each using the values given. (4 points each)**

6)  $y - 5z \div 5$ ; use  $y = 5$ , and  $z = -1$

Show substitution  
 (USE ()'s FOR - #'s)

6  $\hookrightarrow 5 - 5(-1) \div 5 =$   
 $5 + 5 \div 5 =$   
 $5 + 1 = 6$

**Evaluate each expression. (2 points each)**

7)  $(-8) + 2 + (-4) - (-4)$

$-12 + 6 =$   
 $-6$

Tip  
 Add - #'s  
 the + #'s

8)  $-5 \cdot -2 \cdot 2 \cdot -10$

$-200$

Rule

- ① MULT ODD # of -'s  
 $\hookrightarrow$  Answer -#
- ② MULT EVEN # of -'s  
 $\hookrightarrow$  Answer +#

9)  $\frac{16}{0}$

undefined

10)  $\pm\sqrt{400}$

$\pm 20$  OR  
 $20, -20$

11)  $|-4 \times 3|$

Downside || 1st  
 $|-12| = 12$

Variable term is 1st  
AND THE CONSTANT IS LAST

Simplify each expression. Write in standard form with the variable term first and the constant last. (4 points each)

$$12) \overbrace{7(x-4)} - \overbrace{2(8x-2)}$$

$$\Downarrow 7x - 28 - 16x + 4 =$$

$$\boxed{-9x - 24}$$

$$13) \overbrace{-2} - \overbrace{(1-7n)} - 9n =$$

$$-2n - 3 \quad -2 \quad -1 + 7n - 9n$$

$$\boxed{-2n - 3}$$

Solve each equation. And Check. (6 points each)

$$14) -29 - 4n = n + 6(6n + 2)$$

$x = -1; C: -25 = -25$

$$-29 - 4n = n + 36n + 12$$

$$\begin{array}{r} -4n - 29 = 37n + 12 \\ +4n \quad \quad +4n \\ \hline -29 = 41n + 12 \\ -12 \quad \quad -12 \\ \hline -41 = 41n \\ \frac{-41}{41} = \frac{41n}{41} \\ \boxed{n = -1} \end{array}$$

$$15) -4(x-4) - x = -4(3x-4)$$

$x = 0; C: 16 = 16$

$$-4x + 16 - x = -12x + 16$$

$$\begin{array}{r} -5x + 16 = -12x + 16 \\ +12x \quad \quad +12x \\ \hline 7x + 16 = 16 \\ -16 \quad -16 \\ \hline 7x = 0 \\ \frac{7x}{7} = \frac{0}{7} \quad \boxed{x = 0} \end{array}$$

$C: -4(0-4) - 0 = -4(3(0)-4)$   
 $16 = -4(-4)$   
 $16 = 16 \checkmark$

$C: -29 - 4(-1) = -1 + 6(6(-1) + 2)$   
 $-29 + 4 = -1 - 24$   
 $-25 = -25 \checkmark$

$$16) 3n + 7 - 3n = 5(6 - 4n) - 4(5n + 3)$$

No solution.

$$7 = -30 + 20n - 20n - 12$$

$$7 \neq -42 \leftarrow \text{show this step!}$$

$$17) -6(-x+6) - 8x = -6(x+4)$$

$x = 3; C: -42 = -42$

$$6x - 36 - 8x = -6x - 24$$

$$\begin{array}{r} -2x - 36 = -6x - 24 \\ +6x \quad \quad +6x \\ \hline 4x - 36 = -24 \\ +36 \quad +36 \\ \hline 4x = 12 \\ \frac{4x}{4} = \frac{12}{4} \\ \boxed{x = 3} \end{array}$$

No solution - variables dropout  
AND THE CONSTANTS ARE NOT EQUAL

All real #'s variables dropout  
AND THE CONSTANTS ARE EQUAL

$C: -6(-3+6) - 8(3) = -6(3+4)$   
 $-6(3) - 24 = -42$   
 $-42 = -42 \checkmark$