

DO NOW

What are two ways to remember the order of operations?

PEMDAS GEMS

What is the difference between:

$$\begin{array}{ccc} -5^2 & \text{and} & (-5)^2 \\ -(5 \cdot 5) & & (-5)(-5) \\ -25 & & 25 \end{array}$$

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1.4 Evaluating Algebraic Expressions

**Substitute values and follow PEMDAS (or GEMS)

Examples: Evaluate each using the values given.

1. $-2x - 13$ for $x = -3$

$$\begin{array}{l} -2(-3) - 13 \\ 6 - 13 \\ \boxed{-7} \end{array}$$

2. $50 - 3x$ for $x = 7$

$$\begin{array}{l} 50 - 3(7) \\ 50 - 21 \\ \boxed{29} \end{array}$$

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3. $4a - 3b$ for $a = -5$ and $b = 2$

$$\begin{array}{l} 4(-5) - 3(2) \\ -20 - 6 \\ \boxed{-26} \end{array}$$

4. $2x^2 - 5x + 4$ for $x = -7$

$$\begin{array}{l} 2(-7)^2 - 5(-7) + 4 \\ 2(49) - 5(-7) + 4 \\ 98 + 35 + 4 \\ 133 + 4 \\ \boxed{137} \end{array}$$

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5. $-7r + 6u - 5t$ for $r = 3$, $u = -3$, $t = -2$

$$\begin{array}{l} -7(3) + 6(-3) - 5(-2) \\ -21 - 18 + 10 \\ -39 + 10 \\ \boxed{-29} \end{array}$$

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Practice:

1. $2a - 6b - 7c$ for $a = -5$, $b = 2$, $c = 4$

$$\begin{array}{l} 2(-5) - 6(2) - 7(4) \\ -10 - 12 - 28 \\ -22 - 28 \\ \boxed{-50} \end{array}$$

2. $\frac{2b+5}{3b-2}$ for $b = -2$

$$\begin{array}{l} \frac{2(-2)+5}{3(-2)-2} \\ \frac{-4+5}{-6-2} \\ \frac{1}{-8} \\ \boxed{-\frac{1}{8}} \end{array}$$

3. $\frac{3}{4}(8x+4) + \frac{1}{2}z$ for $x = -3$, $z = 8$

$$\begin{array}{l} \frac{3}{4}(8(-3)+4) + \frac{1}{2}(8) \\ \frac{3}{4}(-24+4) + \frac{1}{2}(8) \\ \frac{3}{4}(-20) + \frac{1}{2}(8) \\ -15 + 4 \\ \boxed{-11} \end{array}$$

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HOMEWORK

Worksheet - HW 1.4 Evaluate Expressions

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