

Review Practice

Remember the correct order of operations:

PEMDAS: Parenthesis, Exponents, Multiplication, Division, Addition, Subtraction

FIRST → LAST

To receive credit, you must show your work.

1. Evaluate WITHOUT a calculator.

a. $12 + 2 * 3 = 12 + 6 = 18$
 Multiply 1st

b. $5 + 2(3 + 2^2)$
 $5 + 2(3 + 4)$
 $5 + 2(7)$
 $5 + 14 = 19$

note:

$-3^2 = -9$
 but
 $(-3)^2 = 9$

c. $-3^2 + 5 + 4 * 2 = -9 + 5 + 8 = -4 + 8 = 4$

d. $-5 - (-4) + (-10) - (-2)(3)$
 $-5 + 4 - 10 + 6$
 $= -1 - 10 + 6 = -5$

e. $12 \div 4 * 3 - 5$
 $3 * 3 - 5$
 $9 - 5 = 4$

Here: Move left to right:

1st: $12 / 4 = 3$

2nd: $3 * 3 = 9$

3rd: $9 - 5 = 4$

f. $3[5 + 6(7 - 3) + 7]$
 $6 * 4$
 $3[5 + 24 + 7]$
 $3(36) = 108$

Review Practice

Name _____

2. Simplify by combining like terms.

a.

$$3a^2 - 2b^2 - 7a^2 - 3b^2 = -4a^2 - 5b^2$$

Handwritten notes: $-4a^2$ is circled in blue above the first two terms. $-5b^2$ is circled in red below the last two terms.

b.

Handwritten notes: "need common denominators" in red. "multiply by $\frac{2}{2}$ " in blue. "like terms" in blue under the first two and last two terms. "we multiply by $\frac{2}{2}$ " in red.

$$\frac{1}{5}ab^2 - \frac{3}{10}ab^2 + \frac{2}{5}ab^2 + \frac{7}{10}ab^2 = \frac{4}{10}ab^2$$

$$= \frac{2}{10}ab^2 - \frac{1}{10}ab^2 + \frac{4}{10}ab^2 = \frac{5}{10}ab^2 = \frac{1}{2}ab^2$$

Handwritten notes: "we multiply by $\frac{2}{2}$ " in red. The final result $\frac{1}{2}ab^2$ is boxed.

c.

$$3(2u^2 + 1) + 4(u^2 - 5)$$

Handwritten notes: "distribute" in blue. "combine" in blue.

$$6u^2 + 3 + 4u^2 - 20$$

$$10u^2 + 23$$

Handwritten notes: The final result $10u^2 + 23$ is boxed.

d.

$$3(2x - 3y) - 4(3x + 5y) - x$$

Handwritten notes: "distribute" in blue. "combine" in blue.

$$6x - 9y - 12x - 20y - x$$

$$-7x - 29y$$

Handwritten notes: The final result $-7x - 29y$ is boxed.

e.

$$-5(x^2 - 4) - 2(3x^2 + 6) + (2x^2 - 1)$$

Handwritten notes: "distribute" in blue. "combine" in blue. The terms $-5x^2$, $-6x^2$, and $2x^2$ are underlined in blue. The final result $-9x^2 + 7$ is circled in blue.

$$-5x^2 + 20 - 6x^2 - 12 + 2x^2 - 1$$

$$-9x^2 + 7$$

Review Practice

Below: when you see the phrase "a number" think the variable n .

3. Translate each English phrase into an algebraic expression.

a. Four increased by twice a number

$$\begin{array}{c} \downarrow \quad \downarrow \quad \downarrow \\ 4 \quad + \quad 2n \end{array} = 4 + 2n$$

b. Six less than two-thirds of a number

start: $\frac{2}{3}n$
 then "less six" or subtract six so = $\frac{2}{3}n - 6$

c. Ten times the difference of a number and 14

$$\begin{array}{c} \downarrow \quad \downarrow \\ 10 \quad * \quad (n-14) \end{array} = 10(n-4)$$

d. Eight subtracted from the quotient of a number and seven

-8 is going at the end $n/7$

$$= \frac{n}{7} - 8$$

e. The quotient of a number and three less than the number

one big fraction $\frac{n}{n-3}$

4. What is your major?

5. What is the highest math class you need to take? _____

6. What is the highest math class you want to take?