Topic: PEMDAS and order of operations

Question: Use order of operations to simplify the expression.

$$-5 + 3 \cdot 4 - 6 + (2 - 4) - 3^2$$

Answer choices:

A $\quad$ -10

B $\quad$ -11

C $\quad$ 10

D $\quad$ 5

Solution: A

PEMDAS and order of operations tells us that we have to do

P   Parentheses

$$-5 + 3 \cdot 4 - 6 + (2 - 4) - 3^2$$

$$-5 + 3 \cdot 4 - 6 + (-2) - 3^2$$

E   Exponents

$$-5 + 3 \cdot 4 - 6 + (-2) - 9$$

M   Multiplication

$$-5 + 12 - 6 - 2 - 9$$

D   Division

A   Addition

$$7 - 6 - 2 - 9$$

S   Subtraction

$$1 - 2 - 9$$

$$-1 - 9$$

$$-10$$

Topic: PEMDAS and order of operations

Question: Use order of operations to simplify the expression.

$$3 + 2(x + 1)$$

Answer choices:

A $\quad 6 + 2x$

B $\quad 3 + 2x$

C $\quad 5 + 2x$

D $\quad x + 2$

Solution: C

PEMDAS and order of operations tells us that we have to do

P   Parentheses

$$3 + 2(x + 1)$$

E   Exponents

M   Multiplication

$$3 + 2(x) + 2(1)$$

$$3 + 2x + 2$$

D   Division

A   Addition

$$5 + 2x$$

S   Subtraction

Topic: PEMDAS and order of operations

Question: Use order of operations to simplify the expression.

$$\frac{-2 + 3 - 10 \cdot 2 \cdot \left[(5 - 4) + 2\right]}{2}$$

Answer choices:

A $-\dfrac{59}{2}$

B $\dfrac{59}{2}$

C $\dfrac{2}{59}$

D $-\dfrac{2}{59}$

Solution: A

Order of operations tells us that we have to do the parentheses first, so we start with inner-most symbols of inclusion.

$$\frac{-2 + 3 - 10 \cdot 2 \cdot \left[(5 - 4) + 2\right]}{2}$$

$$\frac{-2 + 3 - 10 \cdot 2 \cdot \left[(1) + 2\right]}{2}$$

$$\frac{-2 + 3 - 10 \cdot 2 \cdot \left[3\right]}{2}$$

Since there are no exponents, we'll do multiplication next.

$$\frac{-2 + 3 - 20 \cdot \left[3\right]}{2}$$

$$\frac{-2 + 3 - 60}{2}$$

When we're dealing with fractions, we must do all of the operations in the numerator and all of the operations in the denominator, and our very last step is to divide the resulting numerator by the resulting denominator. Therefore, we'll do the addition and subtraction in the numerator next.

$$\frac{3 - 62}{2}$$

$$\frac{-59}{2}$$

$$-\frac{59}{2}$$