

Order of Operations:

Simplify each without a calculator

PEMDAS

1. $12 - 2 + 3$
 \downarrow
 $10 + 3 = 13$

2. $20 \div 5 \cdot 2$
 \downarrow
 $4 \cdot 2 = 8$

3. $4 + 2(4^2 - 11)^2$
 $4 + 2(5)^2 \rightarrow 4 + 2(25) = 4 + 50 = 54$

Order of Operations

PEMDAS

How many steps are there?

1st: Simplify inside parentheses first, if possible.

2nd: Exponents.

3rd: Multiply AND Divide from left to right, do which ever comes first.

4th: Add AND Subtract from left to right, do which ever comes first.

Parentheses ()

are just one example of grouping symbols. Can you name two others?

Brackets: []

Braces: { }

Simplify using order of operations

WITHOUT A CALCULATOR

Could be written as

$$4 - 2[13 - (7 + 3)]^2$$

$$4 - 2(13 - (7 + 3))^2$$

$$[13 - 10]$$

$$4 - 2[3]^2$$

$$4 - 2[9]$$

$$-14$$

Simplify

$$5 - 2[1 + (5-2)^2] + 10$$

$$[1 + 3^2]$$

$$[1 + 9]$$

$$5 - 2[10] + 10$$

$$5 - 20 + 10 = -15 + 10 = \textcircled{-5}$$