

G

Grouping

work from inside to outside

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[ ]

$$\frac{4+x}{x-3}$$

E

Exponentials

(left to right)

$x^2$ 
 $\sqrt{x}$

$$|x|$$

M

Mult. & Div

D

Div. & Mult.

A

Add & Subt.

S

Subt. & Add

Order of Operations:

1. Simplify expressions within grouping symbols such as parentheses, or brackets first (start with innermost set)  
If fraction bars are present, simplify the numerator and denominator separately.
2. Evaluate exponential expressions, roots, or absolute values in order from left to right
3. Multiply or divided in order from left to right.
4. Add or subtract in order from left to right.

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Simplify:

$$5(2-6)^2$$

$$5(-4)^2$$

$$5(16)$$

$$80$$

$$3(5-8)^2$$

$$3(-3)^2$$

$$3(9)$$

$$27$$

$$\frac{|-3|^2 + 5}{\sqrt{9} - 10} = \frac{3^2 + 5}{3 - 10}$$

$$= \frac{9 + 5}{-7}$$

$$= \frac{14}{-7} = -2$$

$$\frac{|-5|^2 + 4}{\sqrt{4} - 3} = \frac{25 + 4}{2 - 3} = \frac{29}{-1} = -29$$

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$$7 - [2(1-3) + 5(10-12)]$$

$$7 - [2(-2) + 5(-2)]$$

Subt. to Add

Keep Change Change

$$7 - [-4 + -10]$$

$$7 + [+14]$$

$$21$$

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