

January 25, 2017

1.) $x(x-6) = 3$

$$x^2 - 6x + 9 = 3 + 9$$

$$\sqrt{(x-3)^2} = \sqrt{12}$$

$$x-3 = \pm 2\sqrt{3}$$

$$x = 3 \pm 2\sqrt{3}$$

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2.) $5c(c-2) = 6 + 3c$

$$5c^2 - 10c = 6 + 3c$$

$$\frac{5c^2}{5} - \frac{13c}{5} = \frac{6}{5}$$

$$c^2 - \frac{13}{5}c + \frac{169}{100} = \frac{6}{5} + \frac{169}{100}$$

$$\left(c - \frac{13}{10}\right)^2 = \frac{120 + 169}{100}$$

$$\sqrt{\left(c - \frac{13}{10}\right)^2} = \sqrt{\frac{289}{100}}$$

$$c - \frac{13}{10} = \pm \frac{17}{10}$$

$$c = \frac{13}{10} \pm \frac{17}{10}$$

$$c = \frac{13 \pm 17}{10}$$

$$c = \frac{13+17}{10} = \frac{30}{10} = 3$$

$$c = \frac{13-17}{10} = -\frac{4}{10} = -\frac{2}{5}$$

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Absolute Value

* abs is the distance from zero - which is always positive

def. $|a| = \begin{cases} a & \text{if } a \geq 0 \\ -a & \text{if } a < 0 \end{cases}$

$a = 5$
 $|5| = 5$

$a = -5$
 $|-5| = -(-5) = 5$

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ABS Equations

$|stuff| = k$

① if $k \geq 0$

Ⓐ $stuff = k$

Ⓑ $stuff = -k$

$2|3-2t| + 4 = 10$

$$2|3-2t| = 6$$

$$\underbrace{|3-2t|}_{stuff} = 3 \leftarrow k$$

Ⓐ $3-2t = 3$ Ⓑ $3-2t = -3$

$$-2t = 0$$

$$-2t = -6$$

$$t = 0$$

$$t = 3$$

$\{0, 3\}$

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② $k = 0$

$stuff = 0$

$$|2x+5| = 0$$

$$2x+5 = 0$$

$$2x = -5$$

$$x = -\frac{5}{2}$$

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③ $k < 0$

No Solution!

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