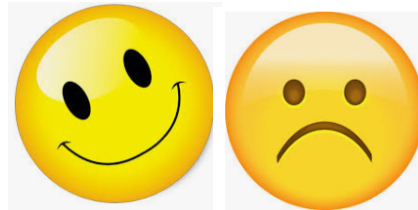


Warm Up



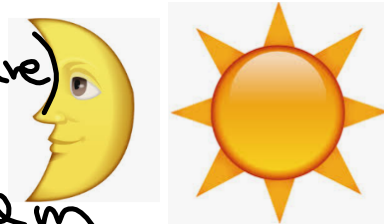
Give 3 examples of opposite operations. In your own words, describe what they do or why they are important.

$(+)$ $(-)$ $(\sqrt{\quad})$ (Square)

(\times) (\div)

$(>)$ $(<)$

We use them to solve equations.



The Pythagorean Theorem of Baseball is used to predict the number of wins a team will have (W) when given the number of runs scored (R), the number of runs the opponents scored (A) and the total number of games played (T).



a. Solve the formula for W:

$$\frac{W}{T} \approx \frac{R^2}{R^2 + A^2}$$

b. In 2012, the Yankees scored 804 runs while their opponents scored 668 runs throughout 162 games. Estimate the number of wins the Yankees had. (The actual number of wins for the NY Yankees in 2012 was 95.)

I Do	We Do	You Do
<p>Solve for x</p> $u = 2x - z$ $\begin{array}{r} +2 \\ \hline \frac{2+u}{2} = \frac{2x}{2} \end{array}$ $1 + \frac{u}{2} = x$	<p>Solve for x:</p> $z = m - x$ $\begin{array}{r} -m \\ \hline -m + z = -x \end{array}$ $\frac{-m}{-1} + \frac{z}{-1} = \frac{-x}{-1}$ $m - z = x$	<p>Solve for x:</p> $g = 2c + x$

✓

<p>Solve for a:</p> $\frac{12am}{12m} = 4$ $a = \frac{4}{12m}$ $a = \frac{1}{3m}$	<p>Solve for c:</p> $\frac{g}{7mv} = \frac{7mvc}{7mv}$ $\frac{g}{7mv} = c$	<p>Solve for x:</p> $\frac{u}{t} = \frac{3r}{2x}$ $\frac{3r}{2u} = \frac{2x \cdot u}{2u}$
<p>Solve for y:</p> $2x + 3y = 12$ $\begin{array}{r} -2x \\ \hline -3y = 12 - 2x \\ -3 \quad -3 \quad -3 \\ \hline y = -4 + \frac{2x}{3} \end{array}$	<p>Solve for y:</p> $5x + 3y = 15$ $\begin{array}{r} -5x \\ \hline 3y = 15 - 5x \\ \frac{3y}{3} = \frac{15}{3} - \frac{5x}{3} \\ y = 5 - \frac{5x}{3} \end{array}$	<p>Solve for y:</p> $x - 3y = 9$ $\begin{array}{r} -x \\ \hline -3y = 9 - x \\ \frac{-3y}{-3} = \frac{9-x}{-3} \end{array}$ $y = -3 + \frac{x}{3}$
		$y = -3 + \frac{1}{3}x$

<p>Solve for b:</p> $a^2 + b^2 = c^2$ $\frac{-a^2}{-a^2} \quad \frac{-a^2}{-a^2}$ $b^2 = c^2 - a^2$ $b = \sqrt{c^2 - a^2}$	<p>Solve for h:</p> $SA = \pi r^2 + \pi r h$ $\frac{-\pi r^2}{-\pi r^2} \quad \frac{-\pi r^2}{-\pi r^2}$ $-\pi r^2 + SA = \pi r h$ $\frac{-\pi r^2 + SA}{\pi r} = \frac{\pi r h}{\pi r}$ $-\frac{\pi r^2}{\pi r} + \frac{SA}{\pi r} = h$ $-r + \frac{SA}{\pi r} = h$	<p>Solve for r:</p> $A = \pi r^2$
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