

Questions over 1.1 Homework?

We are taking the QA before the 1.3 Lesson so make sure you ask for help!

$$\begin{aligned}
 & \text{ } x = 3/4 \\
 & \frac{x + 2y}{3x - 4} = \frac{\frac{3}{4} + 2(-2)y}{\frac{3}{1}(\frac{3}{4}) - 4} = -2 \\
 & \frac{\frac{3}{4} - 4\frac{16}{4}}{\frac{9}{4} - 4\frac{16}{4}} = \frac{-13/4}{\frac{-7}{4}} = -\frac{13}{4} \cdot -\frac{4}{7}
 \end{aligned}$$

$$18. \sqrt{2a^2 + c} - (b - 2a) \quad \begin{matrix} a=5 \\ b=7 \end{matrix}$$

$$\sqrt{2(5)^2 + 14} - (7 - 2(5)) \quad c=14$$

$$a \oplus b = 2a + b$$

$$5 \oplus 3 = 2(5) + 3$$

$$10 + 3$$

$$\text{is } 13$$

$$a \oplus b = \frac{a}{b}$$

$$5 \oplus 3 = \frac{5}{3}$$

$$17$$

Algebra 1: 1.3 Solving Simple Equations

- How to keep an equation balanced
 - > Properties of Equality
 - Addition
 - Subtraction
 - Multiplication
 - Division
 - Modeling and Solving word problems involving simple equations
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Vocab:

Linear Equation (one variable): An equation with one variable that is raised to the **first power**.

Inverse Operations: Operations that will eliminate each other in an equation.

Addition < - > Subtraction

Multiplication < - > Division

Properties of Equality:

So long as you do it to both sides of an equation, the following operations will keep the equation equal.

Addition, Subtraction, Multiplication (whole side), division (whole side)

Solve the equations (isolate the variable) below.

$$\begin{aligned}x - 3 &= -5 \\+3 & \quad +3 \\x + 0 &= -5 + 3 \\x &= -2\end{aligned}$$

Main Idea:

Keep the equation Equal.
What you do to **one side**,
you must do to the other.

Addition and Subtraction
can just be placed at the
end.

$$\begin{aligned} 0.9 &= y + 2.8 \\ -2.8 & \quad -2.8 \\ \hline 0.9 - 2.8 &= y \\ -1.9 &= y \end{aligned}$$

$$\begin{aligned} g - \frac{1}{3} &= -\frac{2}{3} \\ +\frac{1}{3} & \quad +\frac{1}{3} \\ \hline g + 0 &= -\frac{2}{3} + \frac{1}{3} \\ g &= -\frac{1}{3} \end{aligned}$$

- Multiplying and Dividing are inverse operations.

~~*~~ IMPORTANT: You must multiply/divide the Entire equation (all terms), not just one term.

$$\cancel{\frac{3}{1}} \frac{y}{3} = -6 \cdot 3$$
$$y = -18$$

$$\frac{9\pi}{\pi} = \frac{\pi x}{\pi}$$
$$9 = x$$

Example: In the 2012 Olympics Usain Bolt won the 200 meter dash race with a time of 19.32 seconds. Find his average speed to the nearest hundredth of a second.

Formula : Distance = Rate * Time

$$\frac{200 \text{ m}}{19.32 \text{ sec}} = \frac{r \cdot 19.32 \text{ sec}}{19.32 \text{ sec}}$$

$$10.35 \frac{\text{m}}{\text{sec}} = r$$

Example: On January 22, 1943 the temperature in Spearfish, South Dakota fell from 54 degrees at 9:00 AM to -4 degrees by 9:27 AM. How many degrees did the temperature fall by?

$$54 - \boxed{x} = -4$$

$$+x \quad +x$$

$$54 = -4 + x$$

$$+4 \quad +4$$

$$\boxed{58^\circ = x}$$

Homework:

Pages 20-21

Numbers: 5, 6, 10, 11, 21, 22, 27, 30, 42, 43