

Think of any questions you may have from the first half of the chapter.

2-1: Solving Equations

Get the variable by itself by performing inverse operations. You may need to simplify first...

Solve. $3(x - 3) = 15$

$$3x - 9 = 15$$

$$+9 \quad +9$$

$$3x = 24$$

$$x = 8$$

When there are variables on both sides get them all to one side and then solve like normal.

Solve: $3x + 2 - x = 4x + 7$

$$\begin{array}{r} 2x+2=4x+7 \\ -2x \quad -2x \\ \hline 2=2x+7 \end{array}$$

Sometimes when working on a problem your variables will disappear. This becomes a identity/contradiction problem. If you get $5=5$ you have an identity because it is true. A $3=5$ would be a contradiction because it is not true.

When an inequality is involved everything remains the same, just remember to flip the sign if you multiply or divide by a negative number!

2-2: Proportions

To solve a proportion: cross multiply and solve for x.

Solve: $\frac{y}{12} = \frac{77}{84}$

$\frac{\%}{100} = \frac{\text{Part}}{\text{Whole}}$ $84y = \underline{\quad}$

When solving for the number of people or how many of something, remember the equation:

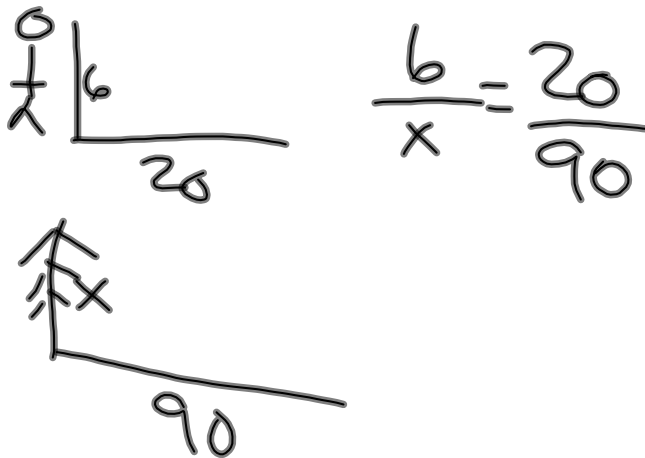
At Clay High School, 434 students, or 35% of the students, play a sport. How many students does Clay High School have?

$$\frac{35}{100} = \frac{434}{x}$$

$$\frac{\Delta 1}{\Delta 2} = \frac{\Delta 1}{\Delta 2}$$

Remember when working with similar figures you need to have corresponding sides on both sides of the equal. Think triangle 1 over triangle 2 for both sides.

A 6-foot-tall climber casts a 20-foot long shadow at the same time that a tree casts a 90-foot long shadow. How tall is the tree?



2-3: Graphing Linear Functions

To graph plot a point and then use the slope to find more points. Connect them. Remember slope is RISE over RUN!

You can also plot the intercepts and connect them. To find the x-intercept plug in 0 for y. To find the y-intercept plug in 0 for x.

Find the intercepts of $3x + 6y = 18$

X-int

$$3x + 6 \cdot 0 = 18$$

$$3x = 18$$

$$x = 6$$

Y-int:

$$3 \cdot 0 + 6y = 18$$

$$6y = 18$$

$$y = 3$$

Everything needs to be kept in slope-intercept form, $y = mx + b$. m is your slope and b is the y-intercept. Plot the y-intercept and then use slope to plot more points.

2-4: Writing Functions

To find slope, use the equation:

$$m = \frac{y_2 - y_1}{x_2 - x_1}$$

It helps to label your points so you don't get things mixed up.

When given points you can find the slope and then put into slope-intercept form by using the point-slope form. This equation is:

$$y - y_1 = m(x - x_1)$$

Just label your numbers and plug them in.

Find the line that goes through the points (5, 2) and (-1, -8).

$$m = \frac{-8 - 2}{-1 - 5} = \frac{-10}{-6} = \frac{5}{3}$$

$$y - 2 = \frac{5}{3}(x - 5)$$

Parallel lines have the exact same slope!

Perpendicular lines have slopes that are opposite reciprocals!

What is the slope of the lines parallel and perpendicular to $y = \underline{3}x - 4$? 3

$$-\frac{1}{3}$$

2-5: Graphing Inequalities

Which two signs constitute a dashed line?

$$< \quad >$$

Which two signs constitute a solid line?

$$\leq \quad \geq$$

Any other questions or problems you want to try before the quiz?