

DAY 1 - SOLVE ONE OR TWO STEP EQUATIONS**SOLVE ONE STEP WORD PROBLEMS**

1.

$$-1 = t - 4$$

Undo weaker operations first

2.

$$-60 = 15x$$

For terms separate from x

3.

$$-16 = 1 - \frac{x}{3}$$

For coefficients attached to x

4.

$$\frac{9 + m}{3} = 2$$

If there is no number on the variable**If you see many terms over one denominator****Steps:**

5.

A stray dog ate 12 of your muffins. That was $\frac{3}{10}$ of all of them! With how many did you start?

6.

Last Friday Adam had \$22.33. Over the weekend he received some money for cleaning the attic. He now has \$32. How much money did he receive?

DAY 2 - SOLVE MULTI STEP EQUATIONS

1.

$$x - 1 = 5x + 3x - 8$$

To collect like terms**Once you combine all variables**

2.

$$5(2x - 3) = 5 - (x - 2)$$

If you see brackets**If you see fractions**

3.

$$\frac{n-1}{2} - \frac{69}{10} = -n + \frac{8}{5}$$

4.

$$\frac{5n}{2} = \frac{4n}{3} - \frac{7}{6}$$

SOLVE TWO STEP WORD PROBLEMS

5.

The sum of three consecutive numbers is 72.
What are the smallest of these numbers?

6.

Maria bought seven ^{more} boxes. A week later half of all her boxes were destroyed in a fire. There are now only 22 boxes left. With how many did she start?

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DAY 3&4 – REARRANGING FORMULAS

1. Solve $d = st$ for s

Rearranging formula steps:

2. Solve $y = mx + b$ for x .

3. Solve for c

$$m = \frac{E}{c^2}$$

4. Solve $w = u + at^2$ for a .

5. Solve for t

$$e = \frac{st - w}{-10}$$

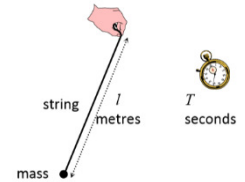
Unit 2 – Solve Equations

Name: _____

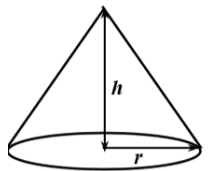
6. $A = P(1 + rt)$
Solve for t with expanding

7. $A = P(1 + rt)$
Solve for t without expanding

8. The time taken for a pendulum of length l to make one full swing is $T = 2\pi\sqrt{\frac{l}{g}}$ where g is the acceleration due to gravity. Rearrange this formula to make the subject l .



9. The volume of a cone with radius r and height h is given by $V = \frac{1}{3}\pi r^2 h$. Rearrange this formula to make the subject r .



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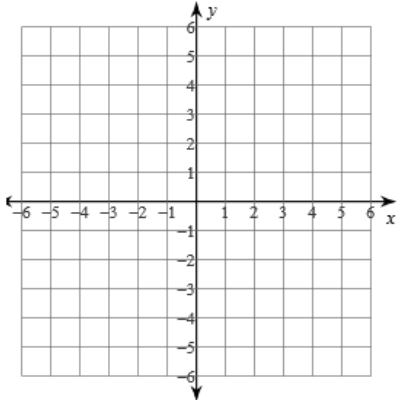
DAY 5 – CONVERT STANDARD FORM TO SLOPE Y-INT FORM

1. $-2x - y + 4 = 0$

To convert to slope y-int form:

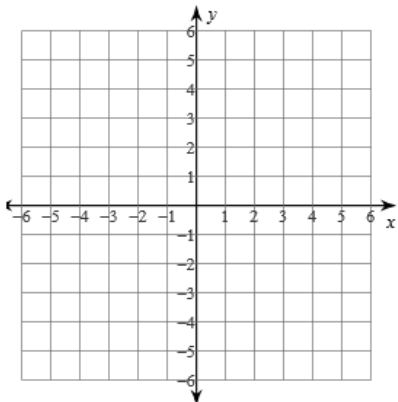
To sketch you must:

Sketch:



2. $5x - 10y - 20 = 0$

Sketch:

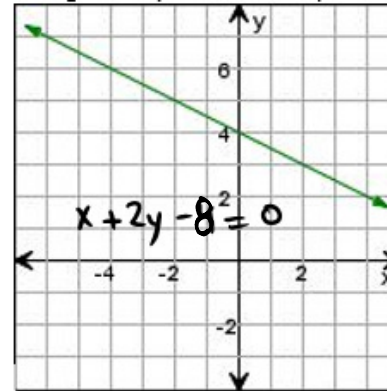


Unit 2 – Solve Equations

Name: _____

3. From the graph locate the slope and y-int then record the equation in slope y-int form. Then convert to standard form and check with the given equation in the picture.

To convert to standard form:



4.

- a) Rearrange the general case of the standard form of a linear equation, $Ax + By + C = 0$, into slope y-intercept form.
- b) Use your result from part a) to find an expression for the slope and the y-intercept in terms of A , B , and C .

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for just taxes:

for total with taxes:

DAY 6 – WORD PROBLEMS

1. Taxes type

You bought a vacation package. The total cost included airport fee of \$100 and taxes of 13%.

- Assign variables and create an equation for this problem.
- Determine the original cost of the vacation without the airport fee or taxes if the total cost was \$1200.

@ let p be original price
let T be total cost

2. One rate type

A banquet hall has a flat fee of \$4000 for the event plus a charge per person attending. There were 250 people at the banquet.

- Assign variables and create an equation for this problem
- If the total cost was \$12 000, what was the charge per person?

@ let p be charge per person
let T be total cost

Unit 2 – Solve Equations

Name: _____

3. Two rates type

A sightseeing train runs tours. An adult ticket is \$3 and a child's ticket is \$1.

- Assign variables and create an equation for this problem.
- If the total revenue was \$750 and 600 child tickets were sold, how many adults went on the tour?

@ let a be # of adults
let c be # of children
let T be total revenue

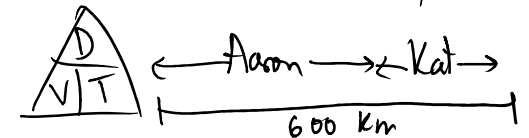
4. Distance/Speed/Time type

Aaron and Kat are each travelling by train. The trains depart at the same time, but travel in opposite directions. Aaron's train travels 20 km/h faster than Kat's. After 3 h, the trains are 600 km apart.

- Assign variables and create an equation for this problem.
- How fast is each train moving?

@

	Distance	Velocity (speed)	Time
Aaron			
Kat			



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SOLVE EQUATION

$$\frac{x+3}{3} - \frac{2-x}{7} = 1$$

$$(7)(3)\frac{(x+3)}{3} - \frac{(2-x)(3)(7)}{7} = 1(3)(7)$$

$$7(x+3) - 3(2-x) = 21$$

$$7x+21 - 6+3x = 21$$

$$10x+15 = 21$$

$$10x+15 = 21$$

$$\frac{10x}{10} = \frac{6}{10}$$

$$x = \frac{6}{10} \text{ or } 0.6$$

REARRANGE FORMULA

$$\frac{4\sqrt{x}-y}{2} = 3a \quad \text{for } x$$

$$(2)(4\sqrt{x}-y) = 3a(2)$$

$$4\sqrt{x}-y = 6a+y$$

$$4\sqrt{x} = 6a+y$$

$$\frac{4\sqrt{x}}{4} = \frac{6a+y}{4}$$

$$\sqrt{x} = \frac{6a+y}{4}$$

$$(\sqrt{x})^2 = \left(\frac{6a+y}{4}\right)^2$$

$$x = \left(\frac{6a+y}{4}\right)^2$$

* insert implied brackets

* clear fractions
(multiply every term by denom)

* remove bracket
by distributing and multiplying

* collect like terms

* undo operations + or -
then x or ÷

* clear fractions

* move terms
(or undo + and -)

* divide by coefficient
(to undo mult)

* get rid of $\sqrt{\quad} \leftrightarrow (\quad)^2$
 $\sqrt[3]{\quad} \leftrightarrow (\quad)^3$

Unit 2 – Solve Equations

Name: _____

REARRANGE LINEAR RELATION

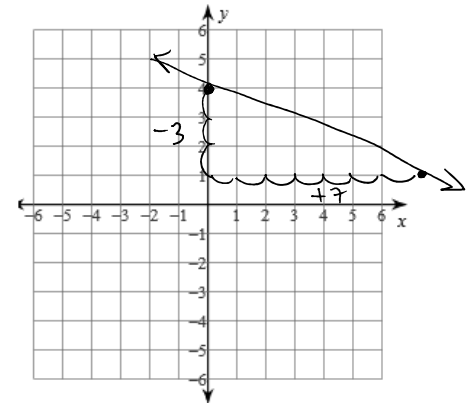
$$-3x-7y+28=0$$

$$-7y = +3x - 28$$

$$\frac{-7y}{-7} = \frac{3x}{-7} - \frac{28}{-7}$$

$$y = \frac{3}{-7}x + 4$$

$$m = \frac{3}{-7} \text{ or } -\frac{3}{7} \quad b = 4$$



WORD PROBLEM

Q-tunes charges \$0.75/song and an annual membership fee of \$20.

a) Create an equation.

$$R.O.C = \frac{\$}{\text{song}} = \frac{\Delta y}{\Delta x}$$

let y be total cost
let x be # of songs

$$\therefore y = 0.75x + 20$$

b) What is the price for a year where you downloaded 25 songs?

$$\text{sub } x = 25$$

$$y = 0.75(25) + 20$$

$$y = 18.75 + 20$$

$$y = 38.75$$

\therefore total cost was \$38.75

c) How many songs were downloaded if the cost was \$70.25?

$$\text{sub } y = 70.25$$

$$70.25 = 0.75x + 20$$

$$70.25 - 20 = 0.75x$$

$$\frac{50.25}{0.75} = \frac{0.75x}{0.75}$$

$$67 = x$$

\therefore 67 songs were downloaded