

What's Going On?

Checking In

F.F.M.

Minds on

Tim's Run

Action!

Making and Solving Equations

Consolidation

Symbols

Learning Goal - I will be able to solve problems involving linear systems.

Checking In

F.F.M.

Solve the system.

$$y = -\frac{2}{3}x - 3 \quad (1)$$

$$\underline{x - 2y = -8} \quad (2)$$

Multiply (1) by 3

$$3(y) = 3\left(-\frac{2}{3}x - 3\right)$$
$$3y = -2x - 9 \quad (3)$$

Rearrange (3)

$$\underline{2x + 3y = -9} \quad (4)$$

$$\frac{\cancel{3}}{x} = \frac{1}{2}$$

$$\frac{1}{2} + \frac{1}{3} = \frac{5}{6}$$

$$\frac{2}{1} + \frac{3}{1} = \frac{6}{5}$$

Minds on

Tim's Run

A few of Mr. Gilbert's Grade 10 students decided to get together over Thanksgiving weekend and compare answers for the TIPS assignment. (they got caught of course)

The group sent Hope on a Tim Horton's run to get 6 coffees and 4 breakfast sandwiches. Hope lost the receipt but remembered that she spent \$24.60 all together.

Elyse knows that a coffee and a breakfast sandwich comes to \$5.25.

What is the price of a single coffee?

What is the price of a breakfast sandwich?

C - price of a coffee
 S - price of breakfast sandwich

Action!

Making and Solving Equations

Peter has decided to invest the \$5000 he has made working as a swim instructor in two different investments.

He invested part of it in a term deposit paying 4% per annum and remainder in bonds paying 5% per annum. If the total interest after one year was \$220, how much did he invest at each rate?

t - amount in term deposit

b - amount in bonds

$$t + b = 5000 \quad (1)$$

$$0.04t + 0.05b = 220 \quad (2)$$

rearrange (1)

$$t = 5000 - b$$

$$0.04(5000 - b) + 0.05b = 220$$

$$200 - 0.04b + 0.05b = 220$$

$$200 + 0.01b = 220$$

$$-200$$

$$-200$$

$$\frac{0.01b}{0.01} = \frac{20}{0.01}$$

$$b = 2000$$

Action!

Making and Solving Equations

At a party, we need a total of 10L of 42% sugar Kool-Aid.

In the fridge, there are 2 bottles of pre-mixed Kool-Aid:
- one with 30% sugar, and one with 50% sugar (by vol.).

How many litres of each pre-mix do we need in order to make this party happen?

x - how many L of 30%
 y - " " " " 50%

$$\begin{aligned}x + y &= 10 \\0.3x + 0.5y &= 0.42\end{aligned}$$

Action!

Making and Solving Equations

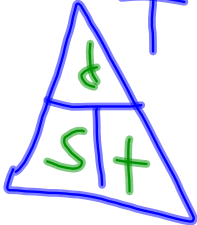
Thomas is out for a bike ride.

It takes him 2 hours to travel 60 km with the wind.

On the way home he does the same distance in 3 hours against the wind.

Find Thomas' speed and the speed of the wind.

t - Thomas' speed
 w - wind speed

$$s = \frac{d}{t}$$


$$\textcircled{1} \text{ speed} = t + w$$

$$\textcircled{2} \text{ speed} = t - w$$

$$60 = 2(t + w)$$

$$60 = 3(t - w)$$

$$d = s \times t$$

$$\begin{aligned} \cdot 60 &= 2(t+w) \\ 60 &= 3(t-w) \end{aligned}$$

①

②

$$\begin{aligned} \cdot \frac{2(t+w)}{2} &= \frac{60}{2} \\ t+w &= 30 \\ - t-w &= 20 \\ \hline 2w &= 10 \end{aligned}$$

Pg 41

Action!

Making and Solving Equations

Mr. Gilbert is on his way home for Thanksgiving Weekend.

His drive is 300 km and he drives part of the way at 100 km/h and part of the way at 80 km/h.

If the whole drive takes him 3.5 hours, how far did he drive at each speed?

h - distance at 100 km/h
 e - " " 80 km/h

$$h + e = 300$$

$$\frac{h}{100} + \frac{e}{80} = 3.5$$

Consolidation

Homework

Page 36 - 37

ALL

Page 44

4, 6, 8, 10, 11, 13, 15, 17