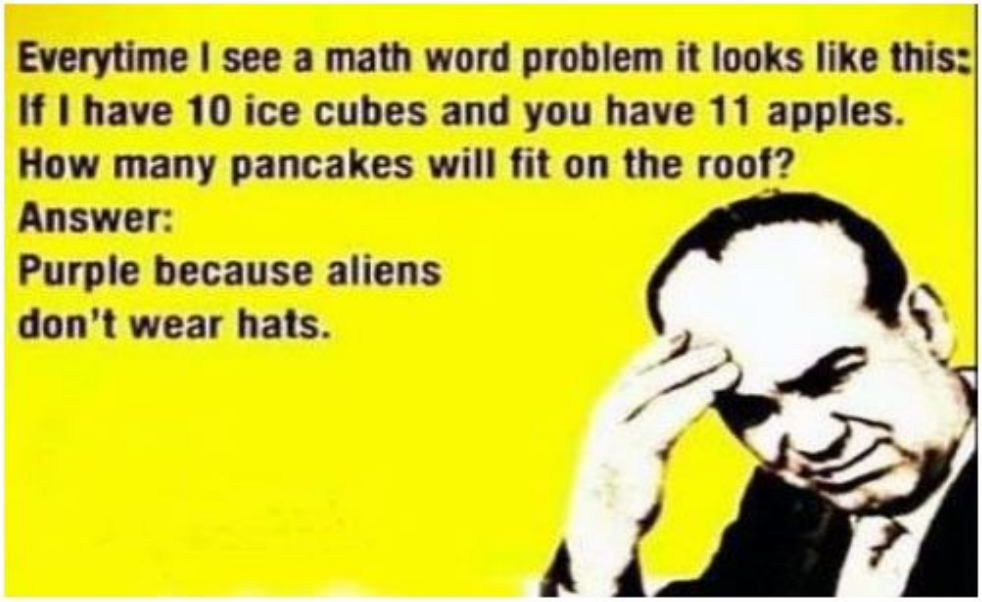
Word Problems



Karlee can ride her bicycle twice as fast as Brooklyn. Brooklyn takes 1 hour longer than Karlee to ride a distance of 24km.

How fast are Karlee and Brooklyn riding their bikes?

$d = vt$

$\boxed{t = \frac{d}{v}}$

	d	v	t
Kaylee	24	$2x$	$\frac{24}{2x}$
Brool	24	x	$\frac{24}{x}$

N.P.V $\Rightarrow x \neq 0$

LCD $\rightarrow 2x$

$t_B = t_K$

$\frac{24}{x} = \frac{24}{2x} - 1$

$\frac{48}{2x} = \frac{24}{2x}(2x)$

$48 - 24 = 2x$

$24 = 2x$

$12 = x$

Brooklyn's velocity was 12 $\frac{Km}{hr}$.

Kaylee's velocity was 24 $\frac{Km}{hr}$.

Dividing a number by 20 gives the same result as dividing 12 by 2 less than the number.

Find the number.

$$\frac{20}{x} = \frac{12}{x-2}$$

LCD $\rightarrow x(x-2)$

NDV $\rightarrow x \neq 0, 2$

$20(x-2) = 12x$

$20x - 40 = 12x$

$20x - 12x = 40$

$8x = 40$

$x = 5$

Dividing 108 by one more than a number gives the same result as dividing 72 by three less than the number.

What is the number?

$$\frac{108}{x+1} = \frac{72}{x-3}$$

LCD $\rightarrow (x+1)(x-3)$

$$(x-3)108 = (x+1)72$$

$$108x - 324 = 72x + 72$$

$$108x - 72x = 72 + 324$$

$$36x = 396$$

$$x = \frac{396}{36}$$

$$x = 11$$

Garrion drove 404km from Edmonton to Banff in the same length of time as Rylan took to drive 364km from Edmonton to Jasper. Garrion drove 10km/hr faster than Rylan.

At what speed did Rylan drive?

	v	d	t
Garrion	$x+10$	404	$\frac{404}{x+10}$
Rylan	x	364	$\frac{364}{x}$

$d = vt$

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

$t_G = t_R$

Hint: Rylan drove at 91 km/hr.

$\frac{404}{x+10} = \frac{364}{x}$

$404x = (x+10)364$

$404x = 364x + 3640$

$404x - 364x = 3640$

$40x = 3640$

$x = \frac{3640}{40}$

$x = 91$ km/hr.

HW Ps 349

#12, 14, 16, 17