

Warm Up Grade 8

Feb. 14



Use Mental Math

30% of 250

$10\% \text{ of } 250 = 25$
 like \div by 10
 $\times 3$ $\left. \begin{array}{l} 10\% \text{ of } 250 = 25 \\ \text{like } \div \text{ by } 10 \end{array} \right\} \times 3$
 $30\% \text{ of } 250 = \boxed{75}$

24% of 3600

$10\% \text{ of } 3600 = 360$
 $\times 2$ $\left. \begin{array}{l} 10\% \text{ of } 3600 = 360 \\ \times 2 \end{array} \right\}$
 $\times 20\% \text{ of } 3600 = 720$

$1\% \text{ of } 3600 = 36$
 like \div by 100
 $\times 4$ $\left. \begin{array}{l} 1\% \text{ of } 3600 = 36 \\ \text{like } \div \text{ by } 100 \end{array} \right\} \times 4$
 $\times 4\% \text{ of } 3600 = 144$

$24\% \text{ of } 3600 = 720 + 144$
 $= \boxed{864}$

Use a calculator for the following

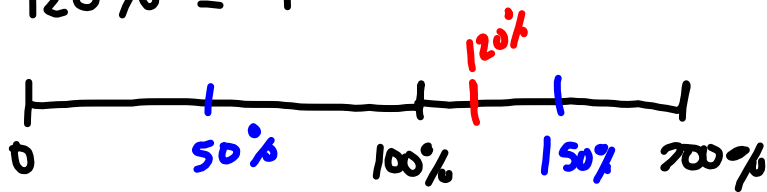
21.5% of 1800

\downarrow change it to decimal
 (by \div it by)

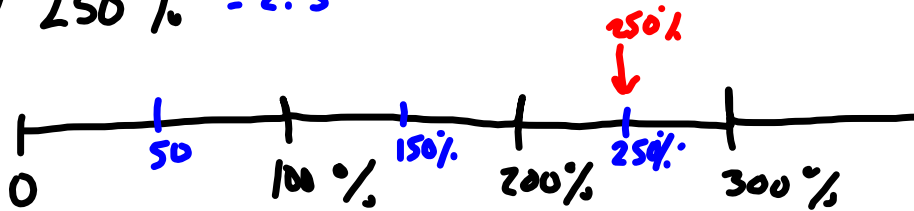
$$0.215 \times 1800 = 387$$

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5) a) $120\% = 1.2$

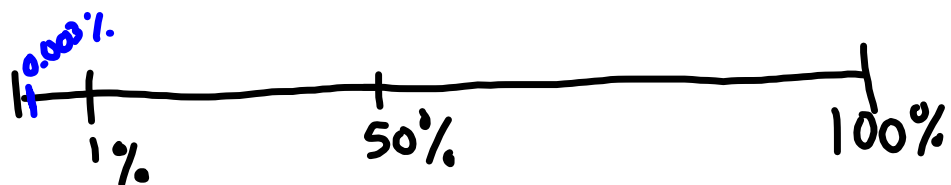


b) $250\% = 2.5$

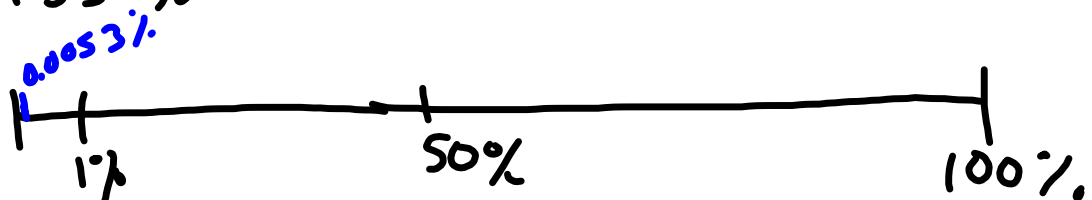


c) $475 = 4.75$

d) $0.3\% = 0.003$



e) $0.53\% = 0.0053$



f) $0.75\% = 0.0075$

#5,6,10, 11

	$\xrightarrow{\times 100}$	Percent	Fraction
a) 1.7		170%	$\frac{170}{100} = \frac{17}{10} = 1\frac{7}{10}$
b) 3.3		330%	$\frac{330}{100} = \frac{33}{10} = 3\frac{3}{10}$
c) 0.003		0.3%	$\frac{0.3 \times 10}{100 \times 10} = \frac{3}{1000}$
d) 0.0056		0.56%	$\frac{0.56 \times 100}{100 \times 100} = \frac{56}{10000} = \frac{28}{5000} = \frac{14}{2500} = \frac{7}{1250}$

b) i) $\frac{1}{3} = 0.\overline{33} = 33.\overline{3}\%$

ii) $\frac{2}{3} = 0.\overline{6} = 66.\overline{6}\%$

iii) $\frac{3}{3} = 1 = 100\%$

iv) $\frac{4}{3} = 1.\overline{3} = 133.\overline{3}\%$

v) $\frac{5}{3} = 1.\overline{6} = 166.\overline{6}\%$

vi) $\frac{6}{3} = 2 = 200\%$

b) As the numerator increases by 1 the percent increases by $33.\overline{3}\%$

c) i) $\frac{7}{3} = 2\frac{1}{3} = 2.\overline{3} = 233.\overline{3}\%$

ii) $\frac{8}{3} = 2\frac{2}{3} = 2.\overline{6} = 266.\overline{6}\%$

iii) $\frac{9}{3} = 3 = 300\%$

iv) $\frac{10}{3} = 3\frac{1}{3} = 3.\overline{3} = 333.\overline{3}\%$

v) $\frac{11}{3} = 3\frac{2}{3} = 3.\overline{6} = 366.\overline{6}\%$

vi) $\frac{12}{3} = 4 = 400\%$

$$1) \text{ a i) } 200\% \text{ of } 360$$

$$\begin{array}{l} \times 2 \left(\begin{array}{l} 100\% \text{ of } 360 = 360 \\ 200\% \text{ of } 360 = 720 \end{array} \right) \times 2 \end{array}$$

$$\text{ii) } 20\% \text{ of } 360$$

$$\begin{array}{l} \times 2 \left(\begin{array}{l} 10\% \text{ of } 360 = 36 \\ 20\% \text{ of } 360 = 72 \end{array} \right) \times 2 \end{array}$$

$$\text{iii) } 2\% \text{ of } 360 =$$

$$\begin{array}{l} \times 2 \left(\begin{array}{l} 1\% \text{ of } 360 = 3.6 \\ 2\% \text{ of } 360 = 7.2 \end{array} \right) \times 2 \end{array}$$

$$\text{iv) } 0.2\% \text{ of } 360$$

$$\begin{array}{l} \times 2 \left(\begin{array}{l} 1\% \text{ of } 360 = 3.6 \\ 2\% \text{ of } 360 = 7.2 \end{array} \right) \times 2 \\ \div 10 \left(\begin{array}{l} 0.2\% \text{ of } 360 = 0.72 \end{array} \right) \div 10 \end{array}$$

b) The digit moves one place to the right each time you decrease your percent by a factor of 10

$$\text{c) } 2000\% \text{ of } 360 = 7200$$

$$\begin{array}{l} \times 10 \left(\begin{array}{l} 100\% \text{ of } 360 = 360 \\ 1000\% \text{ of } 360 = 3600 \end{array} \right) \times 2 \\ \times 2 \left(\begin{array}{l} 2000\% \text{ of } 360 = 7200 \end{array} \right) \times 2 \end{array}$$

$$\text{ii) } 0.02\% \text{ of } 360$$

$$\begin{array}{l} \div 100 \left(\begin{array}{l} 2\% \text{ of } 360 = 7.2 \\ 0.02\% \text{ of } 360 = 0.072 \end{array} \right) \div 100 \end{array} \text{ from above}$$

Percents greater than 100% are used by store owners to calculate the prices of items they sell.

A store has to make a profit; that is, to sell goods for more than the goods cost to buy.

A store manager buys merchandise from a supplier. The price the manager pays is called the *cost* price. The manager *marks up* the cost price to arrive at the *selling price* for the customer. The markup is the *profit*.

$$\text{Cost price} + \text{Profit} = \text{Selling price}$$

↓
What
Store
buys
it
for

mark
up

we buy it for

The cost price of a winter coat is \$80.
The selling price of the coat is 230% of the cost price.
What is the selling price of the coat?
Illustrate the answer with a number line.

Selling Price = 230% of Cost Price

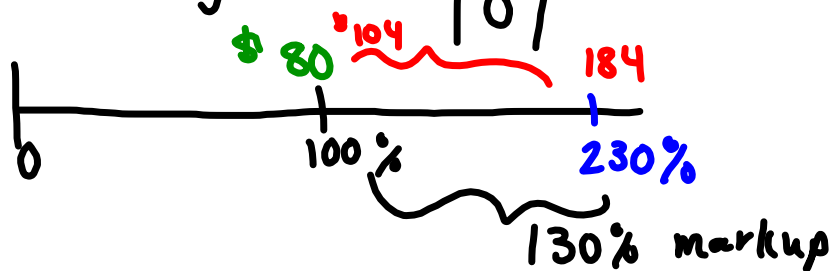
hint change % to decimal

↓
change to a decimal

$$= 2.30 \times \$80$$

Can use calculator but
MUST show work

1 Selling Price = \$ 184



In 2004, the population of First Nations people living on reserves in Alberta was 58 782.

About 0.28% of these people belonged to the Mikisew Cree band.

- About how many people belonged to the Mikisew Cree band?
- Estimate to check the answer is reasonable.

0.28% of Pop of first Nation = Mikisew

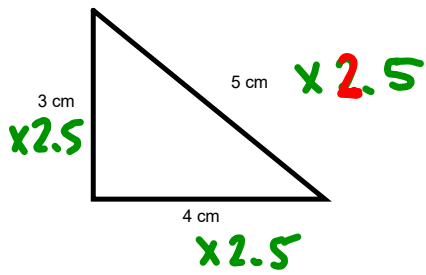
↓ change to decim

$$0.0028 \times 58782 = \text{Mikisew}$$

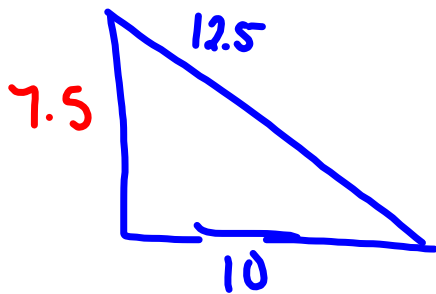
$$164.59 = \text{Mikisew}$$

≈ 165 Round since people

This shape represents 100%. Draw a shape that represents 250%.



250% of each s:d
↓
2.5 X _____



At the movie theatre, 1550 people attended in one week.

The next week the attendance increased by 125%.

a) How many people went to the movie theatre the second week?

b) Estimate to check your answer is reasonable.

$$\begin{aligned} \text{Week 2} &= 125\% \text{ of } 1550 \\ &\quad \downarrow \\ &= 1.25 \times 1550 \\ &= 1938 \end{aligned}$$



b)

$$\begin{aligned} 100\% \text{ of } 1550 &= 1550 \\ &\quad \downarrow \\ 25\% \text{ of } 1600 &= 400 \\ &\quad + \\ &\quad \hline & 1950 \end{aligned}$$

Class/Homework

Page 246 #7, 12a
 Page 247 #14, 15,

7) cost \times % = Selling

12a)

a) 5% of 2600 =

then do
 2600 + =

Show all work

15% of = *

+ * = Answer

14 a) Population = 2600

a) Juan

5% of Pop = *People that
Join our town*

↓ change to decimal

$$0.05 \times 2600 = 130$$

$$\begin{aligned} \text{New pop} &= 2600 + 130 \\ &= 2730 \end{aligned}$$

Jeremy

b) 20% of 2600
=

15% of ^{New} Pop

↓

$$0.15 \times 2730 = 409.5$$

≈ 410

$$\begin{array}{r} \text{Final Pop} = \\ 2730 \\ + 410 \\ \hline 3140 \end{array}$$

pg. 240 #16-19
pg. 245 #1,2,5,6,7