

A little review of rates

Friday, February 5, 2021 11:23 AM

1. Which is the better deal?

a) Sophia buys a 365g bag of chocolate chips for \$4.99.

b) Cassidy buys bulk chocolate chips for \$1.15/100g.

$$a) \frac{\$4.99}{365g} = \$0.0137/g$$

$$b) \frac{\$1.15}{100} = \$0.0115/g$$

↗ Better deal

2. a) Jared drives 250 km in 2h 35min.

b) Payton drives 112 miles in 1h 45min.
↳ 1.75h

Who drives faster?

$$\frac{112 \text{ miles}}{1} \times \frac{1.6 \text{ km}}{1 \text{ mile}} = 179.2 \text{ km}$$

$$2 \text{ h } 35 \text{ min}$$

$$\rightarrow 2.583 \text{ h}$$

$$35 \text{ min} \times \frac{1 \text{ h}}{60 \text{ min}} = 0.58\bar{3}$$

$$a) \frac{250 \text{ km}}{2.583 \text{ h}} = 96.8 \text{ km/h}$$

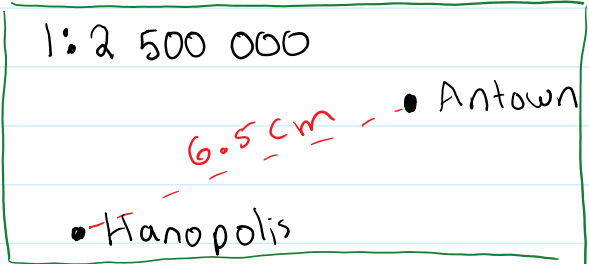
$$b) \frac{179.2 \text{ km}}{1.75 \text{ h}} = 102.4 \text{ km/h}$$

Payton drives faster.

Scale Maps

A good map has a scale factor so you can figure out true distances.

Ex. 1:2 500 000



$K = \frac{\text{diag}}{\text{original}}$

$$\frac{1}{2\,500\,000} = \frac{6.5\text{ cm}}{x}$$

$$x = 16\,250\,000\text{ cm}$$

$$16\,250\,000\text{ cm} \times \frac{1\text{ km}}{100\,000\text{ cm}}$$

$$= \boxed{162.5\text{ km}}$$

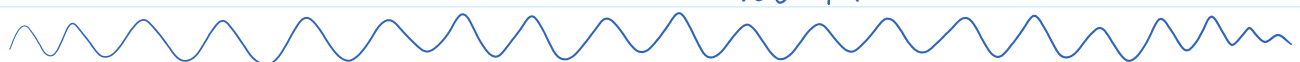
On a map of Campbell River, Timberline is 13.5 cm from Carichi. If the map has a scale of 27:1 400 000, what is the true distance?

$$\frac{27}{1\,400\,000} = \frac{13.5\text{ cm}}{x}$$

$$x = 700\,000\text{ cm}$$

$$700\,000\text{ cm} \times \frac{1\text{ km}}{100\,000\text{ cm}} = 7\text{ km}$$

$$\text{or } 700\,000\text{ cm} \times \frac{1\text{ m}}{100\text{ cm}} \times \frac{1\text{ km}}{1000\text{ m}}$$



Karaville

10.7 cm

map scale

1:2 000 000

Find true distance?

< break

Stonybrook

Find true distance?

$$\frac{1}{2\,000\,000} = \frac{16.7\text{cm}}{x}$$

$$x = 21\,400\,000\text{cm}$$

$$21\,400\,000\text{cm} \times \frac{1\text{km}}{100\,000\text{cm}} = \boxed{214\text{km}}$$