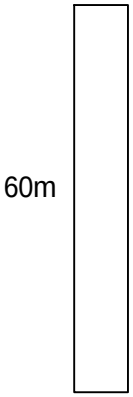
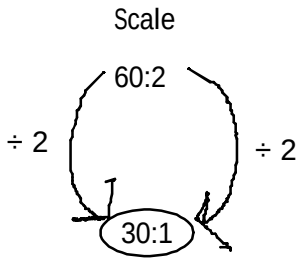
M8 - 2.1 - Scale Ratio Word Problem Notes

A totem pole is 60m tall. A model totem pole is 2m tall. What is the scale as a ratio?

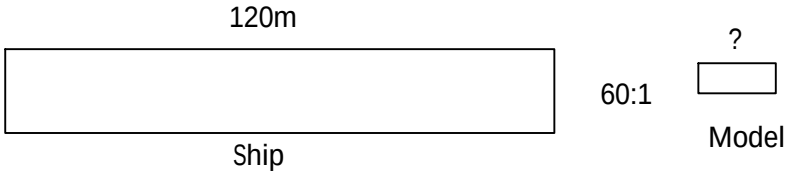


Totem pole Model



Notice: you may simplify ratios by dividing both sides by the same number.

A ship is 120m long. How long is the model if the scale is 60:1



$\frac{?}{120} = \frac{1}{60}$

The larger of the lengths and scale factor on the bottoms of the fractions.

× 2

$\frac{?}{120} = \frac{1}{60}$

Do to the top as you did to the bottom.

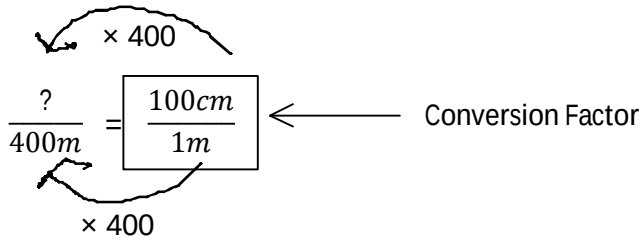
× 2

$\frac{2}{120} = \frac{1}{60}$

The length of the model is 2m

M8 - 2.2 - Conversions Using Equivalent Fractions Notes

1. How many centimeters around a 400m track?

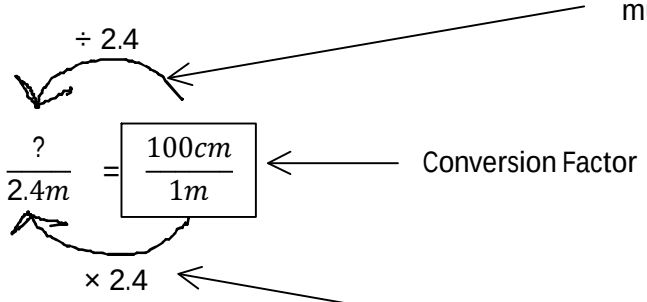


$100cm \times 400 = 40000cm$

There are 40000 cm around a 400 m track.

2. How many centimeters in 2.4 m?

Divide in one direction on bottom, multiply in other direction on top.



$100cm \times 2.4 = 240cm$

There are 240 cm in 2.4 m.

In order to figure out what number to divide by, on your calculator: larger denominator divided by smaller denominator gives scale factor, 2.4 ÷ 1 = 2.4

M8 - 2.0 - Unit Rates Notes

$Mandy\ drove$ 120 km in 2 $hours$. What is the unit speed?

$$Speed = \frac{distance}{time}$$

$$Speed = \frac{120\ km}{2\ hours}$$

$$\frac{120\ km}{2\ hours} = \frac{60\ km}{1\ hour} = 60\ km/h$$

÷ 2 ; ÷2

Devon delivers 45 papers in 30 minutes. What is the unit rate at which he delivers papers?

$$R = \frac{Q}{t}$$

$$R = \frac{45\ papers}{30\ minutes}$$

$$\frac{45\ papers}{30\ minutes} = \frac{1.5\ papers}{1\ minute}$$

÷ 30 ; × 30

Milk costs $ 3.20 for a 4 L jug of milk. How much does the milk cost per litre?

$$Cost = \frac{\$}{unit}$$

$$Cost = \frac{\$\,3.20}{4\ L}$$

$$\frac{\$\,3.20}{4\ L} = \frac{\$\,0.80}{1\ L}$$

÷ 4 ; ÷ 4

There are 18 boys and 12 girls. If the ratio remains equal and there are now 48 girls, how many boys are there?

12:18

$$\frac{18\ boys}{12\ girls} = \frac{72\ boys}{48\ girls}$$

× 4 ; × 4

There are 13 girls and 17 boys in a classroom. If this was the same ratio throughout the school, how many boys are in a school of 480?

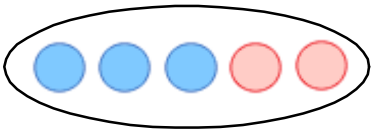
17: 30

$$\frac{17\ boys}{30\ students} = \frac{272\ boys}{480\ students}$$

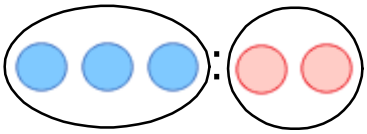
× 16 ; × 16

M8 - 2.0 - Ratios Marbles

You have 3 blue marbles and 2 red marbles in a bag, total 5 marbles.



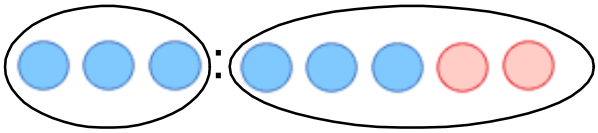
What is the ratio of blue to red marbles?



3: 2

Part to Part

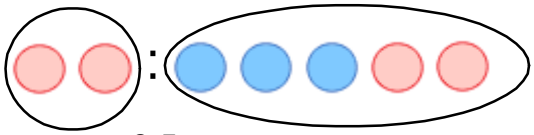
What is the ratio of blue marbles to total marbles?



3: 5

Part to Total

What is the ratio of red marbles to total marbles?



2: 5

Part to Total