

RATIO WORKSHEET

Exercise 1

Convert the following to the same units and use a ratio to compare them (remember to simplify the ratio):

1. (a) 1 m 10 cm; 57 cm
(b) 100 mm; 1 cm
(c) 1.3 cm; 18 mm
(d) 5; three dozen
(e) 1.2 kg; 311 g
(f) 5 min; 49 s
(g) 350 ml; 1.1 litres
(h) 5 cm; 1 km
2. (a) 1 hour; 13 min
(b) 1 week; 4 days
(c) 0.8 cm; 15 mm
(d) 903 kg; 1 t
(e) 1.4 t; 977 kg
(f) 40 cents; \$4.20
(g) 500 cc; 3 litres
(h) 36,000mm³; 1.2l
3. (a) 350; 210
(b) 91; 18.2
(c) $\frac{1}{10}$; $\frac{3}{4}$
(d) $2\frac{3}{4}$; $1\frac{5}{9}$
(e) 10cm²; 0.5m²
(f) 12m²; 1800 mm²
(g) 2200 cm³; 4m³
(h) 0.003 m³; 6900 mm³
4. (a) 160 km/h; 350 m.p.h
(b) 30 metres/sec; 60 km/hr
(c) 75 m.p.h; 80 km/h
(d) 180 km/hr; 60 metres/sec

Note:

t =tonne (1t = 1000kg)
 cc =cm³ (1000cm³=1litre)
 $m.p.h$ = miles per hour (1km=5/8 mile)

Exercise 2

- A. Divide each of the following in the given ratio.
- 1 \$ 250, 2 : 3
 - 2 15 m, 7 : 3
 - 3 5 litres, 2 : 2 : 1
 - 4 30 kg, 1 : 1.5 : 2.5
- B. In each of the following, change the amount in the given ratio.
- 1 \$ 3224, 5 : 8
 - 2 12 h, 4 : 3
 - 3 4 litres, 3 : 2
 - 4 900 cm, 2 : 5
- C.
- 1 Cement, sand and gravel are mixed to make concrete. The ratio used is cement : sand : gravel = 2 : 3 : 1.
 - (a) Find the mass of each material in 33 kg of cement. The ratio of the mixture is changed. The sand is decreased in the ratio 2 : 3, and the gravel is increased in the ratio 3 : 2.
 - (b) Find the ratio of the materials in the new mixture.
 - 2 The profits of a business are divided so that J's share : K's share = 5 : 3.
 - (a) J received \$ 2000, find K's share.
 - (b) Find the total amount of the profits. K's share was changed in the ratio 10 : 9. Calculate
 - (c) the new ratio of J's share : K's share
 - (d) the amount each receives if the profits do not change.

Exercise 3

- An estate valued at \$75 000 is divided among three daughters, Natasha, Natalie and Nadia in the ratio 5:8:2 respectively. Calculate the amount each receives.
- A sum of money was to be shared among three friends, Albert, Michael and Moses, in the ratio 3:5:6. If Michael received \$196 more than Albert, find the sum of money shared.
- An estate valued at \$45 000 is divided among three daughters, Anu, Betty and Chandra in the ratio 7:10:13 respectively. Calculate the amount each received.
- A piece of string of length 85 cm, is divided into three pieces in the ratio 2:3:5. Calculate the length of the
 - shortest piece
 - longest piece.
- An alloy consists of steel, gold and brass in the ratio 5:3:7. Determine the amount of each metal in 150 g of the alloy.
- A sum of money was to be shared among three friends, Ann, Beryl and Candy, in the ratio 2:5:8. If Beryl received \$225 more than Ann, evaluate the sum of money shared.
- An estate valued at \$60 000 is divided among three sons, Albert, Brian and Charles in the ratio 1:2:3 respectively. Calculate the amount each receives.
- A sum of money is divided among three girls, Anna, Barbara and Christy in the ratio 5:3:2. If Barbara received \$400 less than Anna, calculate the amount of money each girl received.
- Share the contents of a box containing 60 chocolates amongst Ann, Marie and James in the ratio 3:4:5. How many chocolates will each get?
- A sum of money is to be divided among A, B and C in the ratio 2:3:5. The smallest share amounts to \$600.

Calculate:

 - the total sum of money to be shared
 - C's share
 - the percentage of the total amount that B receives.
- A piece of ribbon of length 84 cm is divided into three pieces in the ratio 1:4:7. Calculate the length of the longest piece.
- The sum of \$4 500 is divided among Anesha, Sian and Joanne. Sian received half, Anesha received \$1 050 and Joanne received the remainder.

Calculate:

 - Sian's share
 - Joanne's share
 - the ratio in which the \$4 500 was divided among the three persons
 - the percentage of the total amount that Anesha received.
- A sum of money is to be divided among three brothers A, B and C in the ratio 2:3:5. The largest share amounts to \$1 500.

Calculate:

 - the total sum of money to be shared
 - B's share
 - the percentage of the total amount that A receives.
- The sum of money of \$3 500 is divided among Adrian, Sean and James. Sean received half, Adrian received \$850 and James received the remainder.

Calculate:

 - Sean's share
 - James' share
 - the ratio in which the \$3 500 was divided among the three persons
 - the percentage of the total amount that Adrian received.
- A sum of money is to be divided among Albert, Brian and Chrissy in the ratio 3:5:7. Chrissy's share amounts to \$3 500.

Calculate:

 - the total sum of money to be shared
 - Brian's share
 - the percentage of the total amount that Albert receives.
- A sum of money was to be shared among three persons A, B and C in the ratio 3:2:5. If C received \$420 more than B, determine the sum of money shared.
- An alloy consists of steel, silver and copper in the ratio 6:5:9. If the smallest mass is 160 g, calculate the mass of the copper in the alloy.