

① simplify each ratio

a) $5 : 15$

b) $12 : 36 : 9$

c) $0.04 : 0.4$

d) $\frac{4}{5} : \frac{2}{3}$

e) 3 days : 2 weeks

f) 350mL : 2.4L

② Brodie cuts a length of ribbon in 3 pieces in the ratio $1:3:5$. If the largest piece is 75cm long:

a) how long are the other 2 pieces?

b) how long was the entire length of ribbon?

③ Ivy made chocolate crackers containing copha, rice bubbles and cocoa in the ratio $2:2:5:1$. If she used 400g of copha, find the mass of:

a) cocoa,

b) rice bubbles

c) chocolate crackers.

④ The ratio of boys to girls is $4:5$. How many boys and girls are at school if there are 846 students?

⑤ Punch is made of fruit juice, lemonade and ginger ale in the ratio $2:2:1$. How many millilitres of each ingredient are needed to make 6L of punch?

⑥ Steve scored 42 runs in 8 overs. Calculate his ~~run-rate~~ run-rate in runs per over.

⑦ Jake types 64 words per minute. How long will it take him to type a 1500-word essay. Give your answer to the nearest minute.

⑧ A lawn fertiliser is spread at the rate of 5kg per 100m^2 of lawn.

a) how much fertiliser is spread for a rectangle lawn measuring 11m by 7.5m? Give answer to the nearest 0.1kg.

b) how many times can the whole lawn be described in PARTA be treated if a 25kg bag of fertiliser is purchased?

⑨ which size packet of biscuits is the best buy?

• regular : 600g for \$2.40

• family : 1kg for \$4.65

• Snack : 325g for \$1.40

RATES & RATIOS

1. simplify each ratio:

a) 5:15

b) 4:2:10

c) 105:75

d) 12:36:9

e) 3 days: 2 weeks

f) 350mL: 2.4L

2. Brodie cuts a length of ribbon in 3 pieces in the ratio 1:3:5. If the largest piece of ribbon is 75cm, find:

a) how long are the 2 other pieces?

b) how long was the entire length of ribbon?

3. Thelma and Louise share a company in the ratio 7:8. If Louise invests \$384 000, how much does Thelma invest?

4. The ratio of boys to girls at a school was 4:5. How many girls attend school if there are 846 students?

5. Punch is made up of fruit juice, lemonade and ginger ale in the ratio 2:2:1. How many millilitres of each ingredient are needed to make 6L of punch?

6. Tasha's diet consists of protein, fat and carbohydrates in the ratio of 3:0.5:9.5.

a) simplify the ratio

b) how much protein does Tasha have in one day if she consumes 3.5kg of food? Answer to the nearest gram.

c) how much ~~fat~~ would Tasha eat in a day if she ate 20g of fat?

d) how much protein does she eat if she eats 507g of carbohydrates.

7. Steve scored 42 runs in 8 overs. Calculate his runs per over.

8. A bus travels at 96 km/h

a) how far will the bus travel in $3\frac{1}{2}$ hours?

b) how long will the bus take to travel 480km?

9. A tap is dripping water at a rate of 40 drops per minute. Each drop contains 1.3 mL of water. How many litres will drip from the tap in a day?

10. Should I buy a 250 gram bar of soap for \$7.64 or a 400 gram for \$11.25?

12. You can buy 3 1 litre bottles of soft drink for \$6.70 or 24 cans (each 330 mL) for \$13.60. Which is better value?

• what is the average speed formula?

13. A Honda Civic has a fuel consumption of 4.6 L/100 km. How many litres of fuel does it use to travel 480 km.

14. A Kia Sorrento has a fuel consumption of 10.9 L/100 km. Petrol costs \$1.49/L.

a) how much petrol can be bought for \$40. Give your answer correct to the nearest 0.1 L

b) How far can the car travel on \$40 worth of petrol. Correct to the nearest km.

15. Convert:

a) 546 212/year to \$/month b) $0.8 \frac{\text{cm}}{\text{min}}$ to cm/h

c) 1750 mL/s to L/min

16. It takes 20 seconds to fill a 10 L bucket with water. What is the rate for filling the bucket, in litres per hour?

17. If the reaction time of a car driver is 0.9 seconds, how far will the car travel in this time if its speed is:

a) 60 km/h

b) 84 km/h

c) 100 km/h