Computation

Question Bank

1. **Without** using a calculator, find the value of :
   (a) 2 ×7 + 10 ÷ 2 – 1 (b) -3 (-44 – -16) + 20 (c)$36 \div 0.3^2$ (d) $-3(14-7)^2 - 21$

2. **Without** using a calculator , simplify the following:
   (a) $\frac{1}{3} \div 1\frac{1}{4}$ (b) $3\frac{5}{9} + (\frac{1}{6} - \frac{3}{4} \div 4\frac{1}{2})$ (c) $\frac{3\frac{1}{7} - \frac{2}{3}}{2\frac{6}{7}}$ (d) $\frac{\frac{2}{3} + 1\frac{2}{7}}{3 - 2\frac{2}{7}}$

3. **Without** using a calculator, calculate:
   (a)(i) $2.55 \times 6.3 - \frac{7.5}{1.25}$ exactly (ii) give answer to 2 d.p.
   (b) (i) $\frac{26.32 + 38.8}{13.16 - 11.56}$ exactly (ii) write your answer in standard form
   (c) $\frac{10.02 \times 0.14}{0.7 \times 50.1}$ exactly (ii) write your answer in standard form
   (d)(i)0.05181÷3.14 exactly (ii) to 2 d.p., to 3 sig fig, in standard form

4. Write the following fraction in order of increasing size: $\frac{9}{11}, \frac{1}{2}, \frac{13}{22}, \frac{27}{44}$

5. Complete a table by writing the Fraction, Decimal and Percentage equivalent of the following numbers: $\frac{7}{25}, \frac{5}{11}, 0.47, 1.16, 78\%, 250\%$

6. Express the following pairs of quantities as a ratio in its simplest form:
   (i)7 hours,1day (ii) 7m, 250cm (iii) 1.6g, 8mg (iv)15km^2,300m^2 (v) 2400cm^3,0.0048m^3

7. Last year Danya's monthly allowance was $15,000. This year her father has increased it by 22 ½ %. What is her new monthly allowance?

8. Just before announcing a sale the store owner increased the price of shoes by 20 % and then gave a 20% discount (decreased the price by 20%). What is the sales price of a shoe that has a marked price of $3200?

9. A sum of money is divided into three parts between Antonio, Bob and Christopher in the ratio 2:3:5. The largest share amounts to $4500. Calculate
   (i) the total sum of money to be shared (ii) Bob's share (ii)Antonio's amount expressed as a percentage of the total

Computation

Question Bank- **CONVERTING UNITS & RATIO QUESTION BANK**

Note:	
t=tonne	*(1t = 1000kg)*
cc=cm^3	*($1000cm^3$=1litre)*
m.p.h= miles per hour	*(1km=5/8 mile)*

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) 36,000mm^3 ; 1.2*l*

3. (a) 350 ; 210
   (b) 91 ; 18.2
   (c) $\frac{1}{10}$; $\frac{3}{4}$
   (d) $2\frac{3}{4}$; $1\frac{5}{8}$
   (e) 10cm^2 ; 0.5m^2
   (f) 12m^2 ; 1800 mm^2
   (g) 2200 cm^3; 4m^3
   (h) 0.003 m^3 ; 6900 mm^3

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

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.

Computation

Exercise 3

1. 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.
2. 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.
3. 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.
4. A piece of string of length 85 cm, is divided into three pieces in the ratio 2:3:5. Calculate the length of the
   (a) shortest piece (b) longest piece.
5. 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.
6. 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.
7. 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.
8. 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.
9. 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?
10. 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:
    (a) the total sum of money to be shared
    (b) C's share
    (c) the percentage of the total amount that B receives.
11. 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.
12. 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:
    (a) Sian's share
    (b) Joanne's share
    (c) the ratio in which the $4 500 was divided among the three persons
    (d) the percentage of the total amount that Anesha received.
13. 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:
    (a) the total sum of money to be shared
    (b) B's share
    (c) the percentage of the total amount that A receives.
14. 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:
    (a) Sean's share
    (b) James' share
    (c) the ratio in which the $3 500 was divided among the three persons
    (d) the percentage of the total amount that Adrian received.
15. 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:
    (a) the total sum of money to be shared
    (b) Brian's share
    (c) the percentage of the total amount that Albert receives.
16. 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.
17. 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.