Word Problem Worksheet

& Solutions

MGS Paper 2

P6 Mathematics Prelim 2023

Show your working clearly in the space provided for each question and write your answers in the spaces provided. Questions can be found at the end of the worksheet.

6.   Discounted 1st item – camera = $\frac{90}{100}$ x 864 = $777.60

      Discounted laptop = 1406.40 – 777.60 = $628.80

      Price of laptop before discount = $\frac{100}{80}$ x 628.80 = $786

                                                           Ans: $786

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7.   a)
      Volume of water in tank at first = $\frac{1}{10}$ x 1200 = 120 ℓ

      b)
      Flow rate of tap = $\frac{480-120}{12}$ = 30 ℓ per minute

      Water increase in 18 minutes = 30 x 18 = 540 ℓ

      Volume of water after 18 minute = 120 + 540 = 660 ℓ

                                                           Ans: a) 120 ℓ
                                                                  b) 660 ℓ

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8.   Let number of squares at first = u

Difference = 3u – u = 92 – 40 = 52

2u = 52

u = 52 ÷ 2 = 26

Number of rectangle craft paper she bought = 40 – 26 = 14

Ans: 14

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9.   a)

Mass of empty cup = 70 g

b)

C – B = 370 – 280 = 90 g   (1)

A – B = 370 – 340 = 30 g   (2)

C + A = 370 – 70 = 300g   (3)

2C = 90 - 30 + 300 = 360   (1)-(2)+(3)

C = 360 ÷ 2 = 180 g

180 + A = 300   substitute C into (3)

A = 300 – 180 = 120 g

c)
180 – B = 90
B = 180 – 90 = 90 g
Average of A, B, C = (120 + 90 + 180) ÷ 3 = 130 g

Ans: a) 70 g

            b) 120 g

            c) 130 g

10.　a)

∠QPS = 180 – (48 + 48) = 84°　　　　　　　　(PQRS is a rhombus)

b)

∠TSV = 180 – 116 = 64°

∠RST = 180 – 48 – 48 – 64 = 20°

c)

∠QRS = QPS = 84°

∠TRS = 180 – 21 – RST = 180 – 21 – 20 = 139°

∠QRT = 360 – 84 – 139 = 137°

Ans:　a)　84°

b)　20°
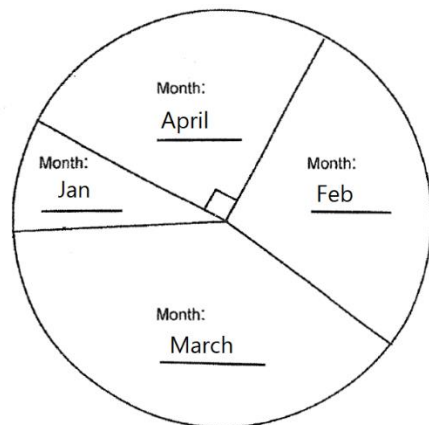
c)　137°

11.　a)

Savings in Jan, Feb, Mar, Apr = $300, $1000, $1400, $900

Total savings = $3600

April savings = $900 = ¼ of total

b)

Percent increase = $\frac{1300 - 300}{300}$ x 100 = $333\frac{1}{3}$ % =

Ans:　a)　see figure

b)　$333\frac{1}{3}$ %

12.   a)

Shaded area = π x 30 x 30 – π x 20 x 20 = 500 x 3.14 = 1570 cm^2

b)

Area of outer circumference = 3.14 x 60 x 42 = 7912.8 cm^2

Area of inner circumference = 3.14 x 40 x 42 = 5275.2 cm^2

Total surface area = 7912.8 + 5275.2 + 1570 +1570 = 16 328 cm^2

Ans: a) 1570 cm^2

          b) 16 328 cm^2

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13.   a)

Additional distance that Ali jogged = 360 x 2 = 720 m

b)

Let distance from Nelson's house to library = d

Time taken by Nelson = time taken by Ali

$$\frac{d}{85} = \frac{d+720}{85+40}$$

125d = 85(d + 720)

125d – 85d = 85 x 720 = 61 200

40d = 61 200

d = 61 200 ÷ 40 = 1530 m

Ans: a) 720 m

          b) 1530 m

14. a)

Difference between length & 2 breadth = 30 – 13 = 17 cm

Difference between 2 lengths & 4 breadth = 17 x 2 = 34 cm

b)

Length of box = 1.5 ÷ 2 = 0.75 m = 75 m

2 breadth = 75 – 17 = 58 cm

Breadth = 58 ÷ 2 = 29 cm = 0.29 m

Width of cardboard = 0.29 x 3 + 0.3 = 1.17 m

Ans: a) 34 cm

b) 1.17 m

15*. a)

Ratio of number of

Hall A		Hall B		
Girls	Boys	Girls	Boys	
7	3			
21u	9u			(x3)
		2	7	
		10u	35u	(x5)

Ratio of Hall A total to Hall B total = 30u : 45u = 2 : 3

Ratio of boys in Hall A to boys in Hall B = 9: 35

b)

Girls left = 21u + 10u = 31u

62% → 31u

1% → 31u ÷ 62 → 0.5u

38% → 0.5u x 38 → 19u

Total boys minus boys remain = 9u+ 35u – 19u = 25u = 375

u = 375 ÷ 25 = 15

Number of boys who remained = 19u = 19 x 15 = 285

Ans: a) 9: 35

b) 285

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16. Sales amount of adult tickets = $\frac{14}{14+3}$ x 9180 = $7560

Sales amount of children tickets = 9180 – 7560 = $1620

Adult $7560 = 4u				
Child $1620 = 1u				

1u of adult ticket cost = $7560 ÷ 4 = $1890

1u of children ticket cost = $1620

Difference = 1890 - 1620 = $270

Difference in ticket cost = $9

Number of children ticket = u = 270 ÷ 9 = 30

Ans: 30

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17. Number per Box

Cupcakes	Tarts	
4	3	
Trays		
3	5	
36	60	(x12)
9 box	20 box	1 set

1 set of 9 cupcake boxes & 20 tart boxes = 9 x 2.10 + 20 x 1.60 = $50.90

Number of such sets = 203.60 ÷ 50.90 = 4

Number of tarts = 4 x 20 x 3 = 240

Ans: 240