

Word Problem Worksheet
& Solutions
Red Swastika 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. a)

Difference between Parcel B and C = $1.2 + 1.2 = 2.4$ kg

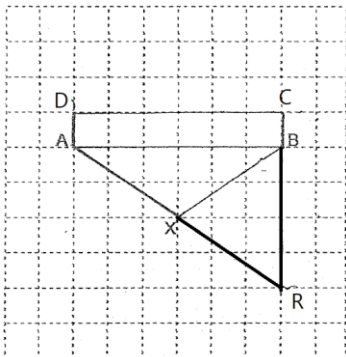
b)

Average mass = mass of parcel A = $13.8 \div 3 = 4.6$ kg

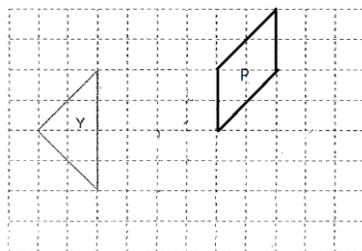
Ans: a) 2.4 kg

b) 4.6 kg

7. a) b)



c)



Ans: See figures

8. a)

$$\angle ABC = 180 - 80 = 100^\circ$$

$$\angle ABE = 100 - 29 = 71^\circ$$

$$\angle BAE = 180 - 71 - 71 = 38^\circ$$

(ABE isosceles triangle)

b)

$$\angle EAD = 80 - 38 = 42^\circ$$

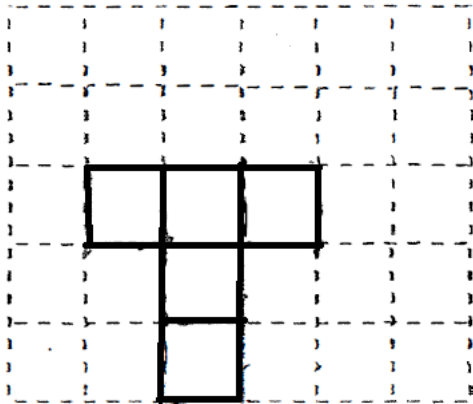
$$\angle ADE = \frac{1}{2} \times (180 - 42) = 69^\circ$$

(ADE isosceles triangle)

Ans: a) 38°

b) 69°

9. a)



b) 2

$$c) 12 + 10 + 9 + 8 + 3 = 42 \text{ cm}^2$$

Ans: a) see figure

b) 2

c) 42 cm^2

10. a)

$$\angle ACB = 180 - 61 - 58 = 61^\circ$$

$$\angle EFC = 360 - 90 - 122 - 61 = 87^\circ$$

$$\angle BEF = 87 - 58 = 29^\circ \quad (\text{exterior angle})$$

b)

AED is isosceles and $AD = ED$

CDEF is not a trapezium and ED is not parallel to FC

Ans: a) 29°

b) is, ED

is not, is not

11. a)

$$\text{Capacity of tank} = (100 \div 80) \times 35 = 43.75 \text{ l}$$

b)

$$\text{Flow rate of Tap A} = (35 - 20) \div 4 = 3.75 \text{ l per minute}$$

c)

$$\text{Flow rate of Tap A minus Tap B} = (20 - 10) \div 4 = 2.5 \text{ l per minute}$$

$$\text{Flow rate of Tap B} = 3.75 - 2.5 = 1.25 \text{ l per minute}$$

Ans: a) 43.75 l

b) 3.75 l

c) 1.25 l

12*. a)

Ratio of number of

Red	Blue	Green	
2	1		
10	5		(x 5)
	5	3	

$$\text{Fraction of green marbles} = \frac{3}{10+5+3} = \frac{1}{6}$$

b)

$$\text{Ratio of Red vs Blue} = 2u : 1u$$

Number of times = n

$$\text{Red marbles left} = 2u - 4n = 18 \quad (1)$$

$$\text{Blue marbles left} = 1u - 3n = 1 \quad (2)$$

$$2u - 6n = 2 \quad (3) = (2) \times 2$$

$$2n = 16 \quad (1) - (3)$$

$$n = 16 \div 2 = 8$$

$$1u - 3 \times 8 = 1 \quad \text{substitute } n \text{ into } (2)$$

$$u = 1 + 24 = 25$$

$$\text{Number of red marbles at first} = 2u = 2 \times 25 = 50$$

Ans: a) $\frac{1}{6}$

b) 50

13. a)

$$\text{Percent increase} = \frac{30}{80} \times 100 = 37.5\%$$

b)

$$\text{Cakes sold in March} = (30 + 80) \times 2 = 220$$

c)

$$\text{Number of cakes in April} = \frac{(100-40)}{100} \times 80 = 48$$

$$\text{Greatest number of cakes in May} = 249 - 48 = 201$$

Ans: a) 37.5%

b) 220

c) 201

14. a)

$$\text{Additional distance travelled by Paul} = 240 + 240 = 480 \text{ m}$$

b)

$$\text{time taken} = \frac{\text{distance difference}}{\text{velocity difference}} = \frac{480}{15} = 32 \text{ min}$$

$$\text{Distance from Rani's house to stadium} = 32 \times 100 = 3200 \text{ m}$$

Ans: a) 480 m

b) 3200 m

15. a)
26, 16cm
b)
Every 3 figures, 1 extra level is completed
Figure 123 has 117 more figures from fig 6
117 is 39×3 or 39 extra completed levels
Each level requires 10 extra blocks
Total blocks for Figure 123 = $39 \times 10 + 23 = 413$

Ans: a) 26, 16 cm
b) 413

16. a)
 $YZ = 7 \times 4 = 28$ cm
b)
Area of XYZ = $\frac{1}{2} \times 28 \times 14 = 196$ cm²
c)
Shaded area = big quadrant – semi-circle + small circle
 $\frac{1}{4} \times \frac{22}{7} \times 28 \times 28 - \frac{1}{2} \times \frac{22}{7} \times 14 \times 14 + \frac{22}{7} \times 7 \times 7$
 $= 616 - 308 + 154 = 462$ cm²

Ans: a) 28 cm
b) 196 cm²
c) 462 cm²

17. a)

Number of donuts boxes required = $20 \div 8 \approx 3$

Number of cupcake boxes = 1

Least amount = $3 \times 15 + 7 = \$52$

b)

$\frac{3}{7}$ of rest of money $\rightarrow \frac{1}{3}$ of whole

$\frac{7}{7}$ of rest of money $\rightarrow \frac{7}{3} \times \frac{1}{3} = \frac{7}{9}$ of whole

Fraction of Alice spending = $1 - \frac{7}{9} = \frac{2}{9}$

Ans: a) \$52

b) $\frac{2}{9}$
