

Word Problem Worksheet
& Solutions
Ai Tong 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)

$$\text{Percentage in Dance Club \& Brownies} = 100 - 25 - 15 - 30 = 30\%$$

b)

$$\text{Number of students in Dance Club \& Brownies} = \frac{30}{100} \times 300 = 90$$

$$\text{Ratio of Dance Club to Brownies} = 3u : 2u$$

$$\text{Number of students in Brownies} = \frac{2u}{3u+2u} \times 90 = 36$$

Ans: a) 30%

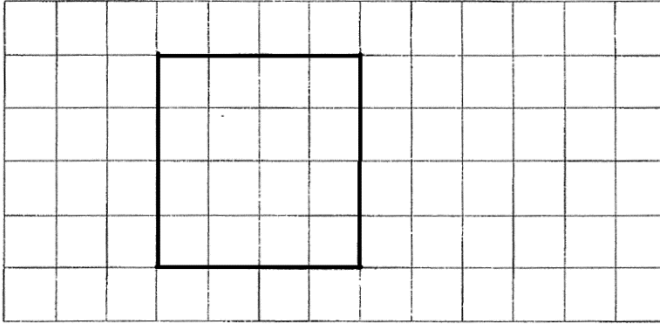
b) 36

7. Volume of container = $24 \times 20 \times 14 + 14 \times 85 \times (42 - 24) = 6720 + 21\,420$
 $= 28\,140 \text{ cm}^3 = 28.14 \text{ l}$

$$\text{Time taken to fill container} = 28.14 \div 2.01 = 14 \text{ minutes}$$

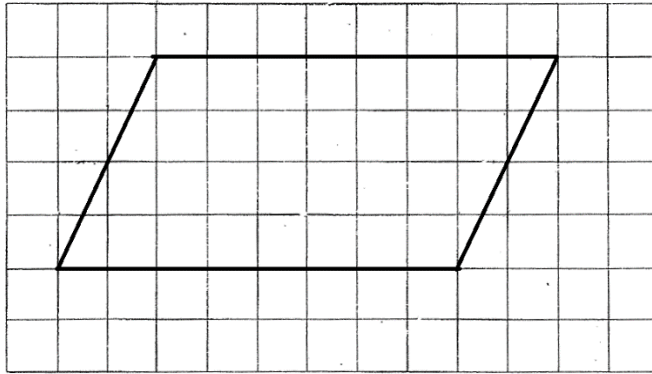
Ans: 14 minutes

8. a)



Area of square = $2 \times 2 = 4$ square units

b)



Ans: a) see figure
b) see figure

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9. Increase in soccer balls = $\frac{40}{100} \times 45 = 18$
Increase in ping pong balls = $\frac{25}{100} \times 68 = 17$
Increase in basket balls = $80 - 18 - 17 = 45$
Percent increase in number of basketballs = $\frac{45}{30} \times 100 = 150\%$

Ans: 150%

10. Time taken by Farah = $20 \div 30 = \frac{2}{3} \text{ h} = \frac{2}{3} \times 60 \text{ min} = 40 \text{ min}$

Time taken by Jamil = $40 + 15 = 55 \text{ min}$

Distance traveled by Jamil = $\frac{55}{60} \times 42 = 38.5 \text{ km}$

Ans: 38.5 km

11. $\angle TUV = 180 - 122 = 58^\circ$

$\angle VUX = 78^\circ$

(rhombus)

$\angle y = 360 - 58 - 78 = 224^\circ$

Ans: 224°

12. Ratio of number of boys to girls at the end = $4u : 9u$

$\frac{3}{4}$ of girls $\rightarrow 9u$

$\frac{4}{4}$ of girls $\rightarrow 9u \times \frac{4}{3} \rightarrow 12u =$ number of girls at first

Number of boys at first = $4u + 536$

Total at first = $4u + 536 + 12u = 2120$

$16u = 2120 - 536 = 1584$

$u = 1584 \div 16 = 99$

Additional girls at the end = $9u - 4u = 5u = 5 \times 99 = 495$

Ans: 495

13. a)

Capacity of 24 small containers = $24 \times 75 = 1800 \text{ m}\ell$

Difference in capacity between big & small containers = $375 - 75 = 300 \text{ m}\ell$

Number of big containers = $1800 \div 300 = 6$

b)

Capacity of 6 big & small containers = $(375 + 75) \times 6 = 2700 \text{ m}\ell$

Total amount of pancake mixture = $1800 + 2700 = 4500 \text{ m}\ell$

Ans: a) 6

b) 4500 mℓ

14. a)

$$\angle VUT = (180 - 90) \times \frac{1}{2} = 45^\circ$$

b)

$$\angle RWX = 90 - 18 = 72^\circ$$

$$\angle X_{\text{new}}WX_{\text{OLD}} = 180 - 72 = 108^\circ$$

$$\angle XWU = \frac{1}{2} \times 108 = 54^\circ$$

Ans: a) 45°

b) 54°

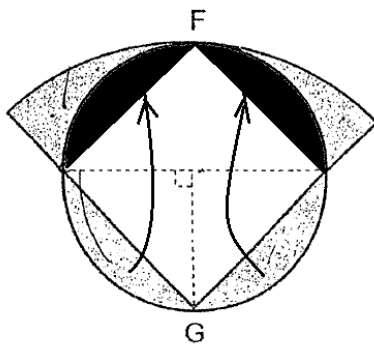
15. Radius of circle = $24 \div 2 = 12$ cm

Radius of quadrant = 24 cm

Shaded area = big quadrant – square

$$= \frac{1}{4} \times \pi \times 24 \times 24 - 24 \times 12$$

$$= 452.16 - 288 = 164.16 \text{ cm}^2$$



:

Ans: 164.16 cm^2

16. a)

$$\text{Sale amount of dresses} = \frac{1}{2} \times (6120 - 3240) = \$1440$$

$$\text{Sale amount of bags} = 6120 - 1440 = \$4680$$

b)

$$\text{Let number of dresses} = u$$

$$\text{Number of bags} = 4u$$

$$\text{Sales amount of } 1u \text{ bags} = 4680 \div 4 = \$1170$$

$$\text{Sales amount of } 1u \text{ dresses} = 1440$$

$$\text{Difference in sales amount} = 1440 - 1170 = \$270$$

$$\text{Number of dresses} = 270 \div 15 = 18$$

Ans: a) \$4680
b) 18

17* a)

	Ali	Brandon	Carrie	Devi
Amount at first	3u	3u	3u	3u
After first step	3u-2u=1u	3u+2u=5u	3u	3u
Total = 3u				

$$\text{Fraction of Ali's share in the end} = u \div 12u = \frac{1}{12}$$

b)

Amount	u	5u-u=4u	3u + u = 4u	3u
X2	2u	8u	8u	6u
$8u \times \frac{3}{8} u = 3u$				
Amount	2u	8u	8u-3u	6u + 3u +55
$6u + 3u +55 = 595 = 540$				
$u = 540 \div 9 = 60$				
Total = 12u = 24 x 60 = \$1440				

Ans: a) $\frac{1}{12}$
b) \$1440

