RAPHA EXAMINATIONS BOARD
P7 MAKING GUIDE FOR MATHS
PRE - MOCK SET 3
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SECTION A.

1. 

$= 6 + 6 + 6 + 6 + 6$

$= 12 + 12 + 6$

$= 24 + 6$

$= 30$

2.

H	T	O	t/h
8	4	2	9/7

①

842.9

$+ \quad 0.1$

843.0

3. $(2+5) - 3 = -\pmod 5$

$7 - 3 = 4 \pmod 5$

$2 - 3 = 4 \pmod 5$

4. $1, 4, 9, 16, \underline{25}, \underline{36}$

$1^2 \quad 2^2 \quad 3^2 \quad 4^2 \quad 5^2 \quad 6^2$

5. $90° - (3x - 30)° = 40°$

$\frac{90^\phi}{1^\phi} - \frac{(3x-30)^\phi}{1^\phi} = \frac{40^\phi}{1^\phi}$

$90 - (3x - 30) = 40$

$90 - 3x + 30 = 40$

$90 + 30 - 3x = 40$

$120 - 3x = 40$

$120 - 120 - 3x = 40 - 120$

$-3x = -80$

$\frac{-3x}{-3} = \frac{-80}{-3}$ $\quad 26 \text{ r } 2$

$x = 26\frac{2}{3}$

6. $= 5x - 4x$

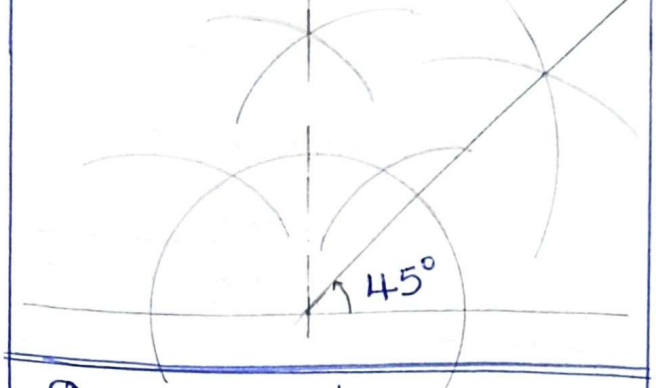
$= x$

7. $-5 - (+5)$

$-5 - 5$

-10

8.



9.

① ① 1 3 3 five + 1 2 4 five 3 1 2 five	7 ÷ 5 = 1 r 2 6 ÷ 5 = 1 r 1

10. Set (P − R)

11. $= \sqrt{121}$

$= \sqrt{(11 \times 11)}$

$= \sqrt{11^2}$

$= 11$

11	121
11	11
	1

12. $(100 + 20)\%$

120%

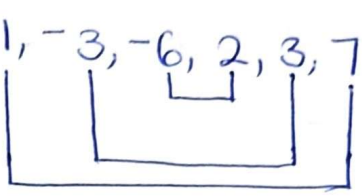
$\frac{120}{100} \times$ Sh. 2,000

$\frac{120}{100} \times$ Sh. 2,000

(120×20)

Sh. 2,400

13.



$\frac{-6+2}{2}$

$\frac{-4^2}{2}$

1

-2

14. $C = \pi D$

$C = \frac{22}{7} \times 7\text{cm}$

$C = \frac{22}{7_1} \times 7\text{cm}$

$C = 22\text{cm}$

15. Number of subsets $= 2^n$

32

$2^5 = 2^n$

$5 = n$

$n = 5$

$n(Q) = 5$

2	32
2	16
2	8
2	4
2	2
	1

2^5

16.

2	8	12
2	4	6
	2	3

G.C.F $= 2 \times 2$

G.C.F $= 4$

17. $-6+8$
$+2$

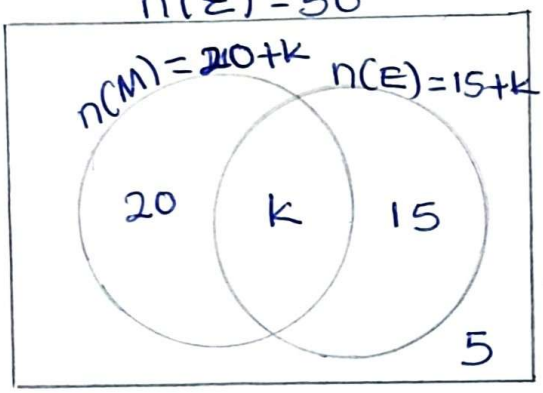
18. $XL = 40$
$IV = +4$
$XLIV = 44$

19. $4-4-3k = -8-4$
$-3k = -12$
$\frac{-3k}{-3} = \frac{-12}{-3}$
$k = 4$

20. $10,000\,m^2 = 1$ hectares
$400\,m^2 = \left(\frac{400}{10,000}\right)$ hectares
$400\,m^2 = \left(\frac{4}{100}\right)$ hectares
$400\,m^2 = 0.04$ hectares.

SECTION B.

21. (a).



b). $20+k+15+5 = 50$
$20+k+20 = 50$
$20+20+k = 50$
$40+k = 50$
$40-40+k = 50-40$
$k = 10$

$n(M) = 20+k$
$n(M) = 20+10$
$n(M) = 30$

22(a).

$V = L \times W \times H$

$V = 8cm \times 5cm \times 6cm$

$V = 40cm^2 \times 6cm$

$V = 240cm^3$

b).

$T.S.A = 2(L \times W) + 2(L \times H) + 2(W \times H)$

$T.S.A = 2(8cm \times 5cm) + 2(8cm \times 6cm) + 2(5cm \times 6cm)$

$T.S.A = 2(40cm^2) + 2(48cm^2) + 2(30cm^2)$

$T.S.A = 80cm^2 + 96cm^2 + 60cm^2$

$T.S.A = 236cm^2.$

23. a)

$(2y+20)^\circ + (y+30)^\circ + (3y+10)^\circ = 180^\circ$

$\frac{(2y+20)^\phi}{1^\phi} + \frac{(y+30)^\phi}{1^\phi} + \frac{(3y+10)^\phi}{1^\phi} = \frac{180^\phi}{1^\phi}$

$2y+20+y+30+3y+10 = 180$

$2y+y+3y+20+30+10 = 180$

$6y + 60 = 180$

$6y + 60 - 60 = 180 - 60$

$6y = 120$

$\frac{6y}{6} = \frac{120}{6}$

$y = 20$

b).

$\angle KLM = (y+30)^\circ$

$\angle KLM = (20+30)^\circ$

$\angle KLM = 50^\circ$

24. a)

$= (3+1+4+2)$ pupils

$= (4+6)$ pupils

$= 10$ pupils

b).

$R = H - L$

$R = (90-62)$ marks

$R = 28$ marks.

$$\begin{array}{r} {}^{8}\not{9}{}^{1}0 \\ -\,62 \\ \hline 28 \end{array}$$

c).

$$\text{Mean} = \frac{\text{sum}}{\text{n(items)}}$$

$$\text{Mean} = \frac{(85\times3)+(75\times1)+(62\times4)+(90\times2)}{3+1+4+2}$$

$$\text{Mean} = \frac{255+75+248+180}{10}$$

$$\text{Mean} = \frac{330+428}{10}$$

$$\text{Mean} = \frac{758}{10}$$

$$\text{Mean} = \frac{75\not{8}}{1\not{0}}$$

Mean = 75.8 marks.

25. Outer figure

Length

25m + 2m + 2m

25m + 4m

29m

Width.

16m + 2m + 2m

16m + 4m

20m

$A = L \times W$

$A = 29m \times 20m$

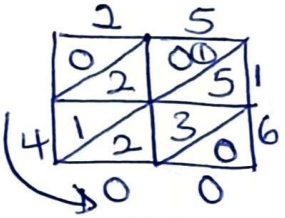
$A = 580m^2$

Inner figure

$A = L \times W$

$A = 25m \times 16m$

$A = 400m^2$



400.

Shaded part

$580m^2$

$-400m^2$

$180m^2$

26. a)

$(100 - 40)\%$

60%

b)

$\left(\frac{40}{100} \times 300\right)$ males

$= (40 \times 3)$ males

$= 120$ males

$\left(\frac{1}{6} \times 120\right)$ boys

$\left(\frac{1}{6} \times \frac{20}{120}\right)$ boys

$= 20$ boys.

c).

$\left(\frac{60}{100} \times 300\right)$ females

(60×3) females

180 females

180 females
$-$ 120 males

60 more females.

27) ~~27).~~

B.P

Sh.(500×30)

Sh. 15,000

1 tray = 30 eggs

$^{2}\cancel{3}10$ eggs
$-$ 6 eggs

24 eggs

Selling price

Sh(24×600)

Sh. 14,400

Loss

L = B.P $-$ S.P

Sh. $1\overset{4}{\cancel{5}}$,000
$-$Sh. 14,400

Sh. 600

~~% P~~

% Loss $= \frac{\text{Loss}}{\text{B.P}} \times 100\%$

$= \left(\frac{\text{Sh. } 600}{\text{Sh. } 15{,}000} \times 100\right)\%$

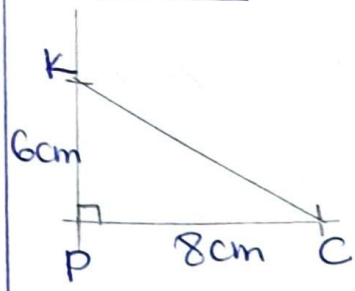
$= \left(\frac{\cancel{\text{Sh. } 600}^{1\ 2}}{\cancel{\text{Sh. } 15{,}000}_{1\ 3_{1}}} \times \cancel{100}^{2}\right)\%$

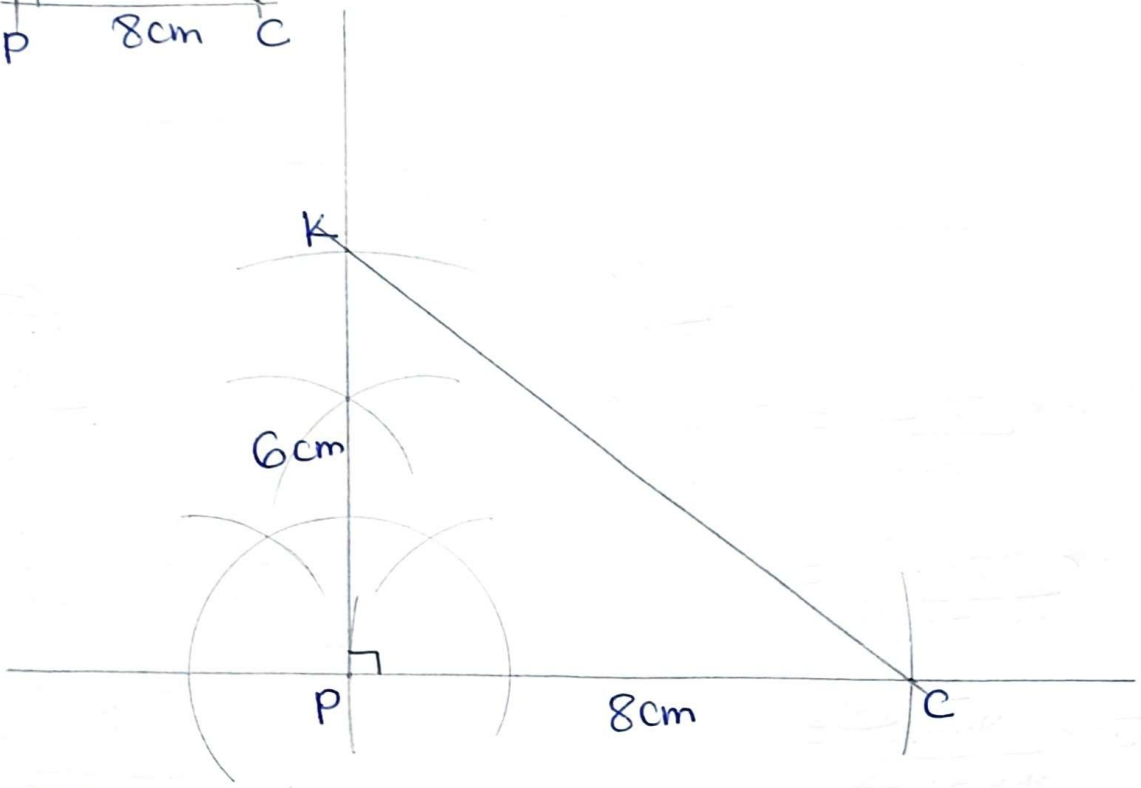
$= (2 \times 2)\%$

$= 4\%$

28. a).

Sketch





$\overline{KC}$ = 10.1cm Accept 10 cm or 10.2 cm.

29. (a)

2	12	18
2	6	9
3	3	9
3	1	3
	1	1

= (2 x 2 x 3 x 3) days

= (4 x 9) days

= 36 days

(b). Friday + 36 = — (mod 7)

5 + 36 = — (mod 7)

41 = — (mod 7)

$\frac{41}{7}$ 5r6

= 6 (mod 7)

They will report again on Saturday.

30. a)

Associative property.

b). = (0.05 × 0.1) ÷ 0.005

$= \left(\frac{5}{100} \times \frac{1}{10}\right) \div \left(\frac{5}{1000}\right)$

$= \frac{5^{1}}{100} \times \frac{1}{10} \times \frac{1000}{5_{1}}$

= 1

31. a)

T	O	.	t	h	th
8	9	.	6	3	4

$= 3 \times \frac{1}{100}$

$= \frac{03}{100}$

= 0.03

b).

10^1	10^0	.	10^{-1}	10^{-2}	10^{-3}
8	9	.	6	3	4

$(8 \times 10^1) + (9 \times 10^0) + (6 \times 10^{-1}) + (3 \times 10^{-2}) + (4 \times 10^{-3})$

32 (a).

$9(2a) = 3 \times 6$

$9 \times 2a = 18$

$2a^2 = 18$

$\frac{2^1 a^2}{2_1} = \frac{18^9}{2_1}$

$a^2 = 9$

$\sqrt{a^2} = \sqrt{9}$

$\sqrt{a^2} = \sqrt{3^2}$

$a = 3$

3	9
3	3
	1

$\sqrt{(3 \times 3)}$

$\sqrt{3^2}$

b). $= \frac{-(m \times n)}{m - n}$

$= \frac{-(-1 \times 1)}{-1 - 1}$

$= \frac{-(-1)}{-2}$

$= \frac{1}{-2}$

$= -\frac{1}{2}$