

1) $\frac{40}{100} \times 30\,000\,000 = 12000$ $\longrightarrow$ (2)

(1) (1)

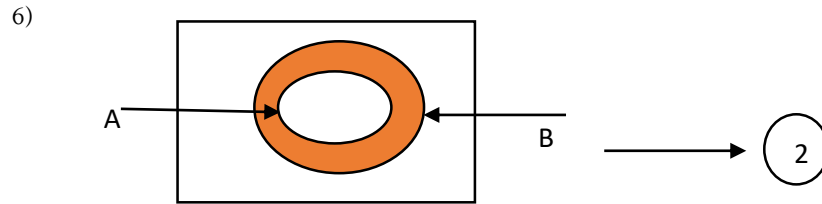
2) $\frac{1}{2} \times 2 \times \frac{22}{7} \times 14 = 44\text{ cm}$ $\longrightarrow$ (2)

(1) (1)

3) $24x^2y$ $\longrightarrow$ (2)

4) $BC = OR$ (පා.පා.පා.) හෝ $B\hat{A}C = G\hat{P}R$ (පා.කෝ.පා.) $\longrightarrow$ (2)

5) $2x = 6$ (1)
 $x = 3$ $\longrightarrow$ (2)



7) $5^3 = 125$ $\longrightarrow$ (2)

8) 6.3 $\longrightarrow$ (2)

9) $110^\circ - 70^\circ = 40^\circ$ $\longrightarrow$ (2)

(1)

10) $(x + 6)(x + 2)$ $\longrightarrow$ (2)

11) $\frac{60}{20} \times 35 = 105^\circ$ $\longrightarrow$ (2)

(1) (1)

12) $Q\hat{R}P = 40^\circ$ (1)

$P\hat{Q}R = 100^\circ \longrightarrow (2)$

13) $\frac{5-3}{4-0} = \frac{2}{4} = \frac{1}{2} \longrightarrow (2)$

(1)

14) $S\hat{R}P = 20^\circ \longrightarrow (2)$

15) $x = 7$ හෝ $x = -3 \longrightarrow (2)$

16) $\frac{8 \times 6}{4} = 12 \longrightarrow (2)$

(1)

17) $(A \cup B) = n(A) + n(B) - n(A \cap B)$

$9 = 7 + 4 - n(A \cap B)$ (1)

$n(A \cap B) = 2 \longrightarrow (2)$

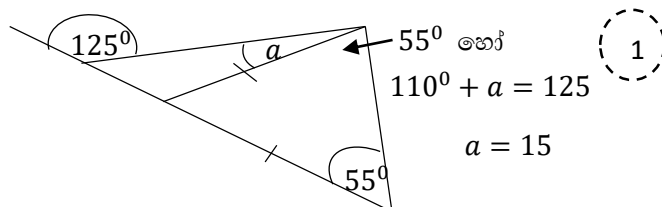
18) $5 \times 4 = 20 \text{ cm}^2 \longrightarrow (2)$

19) $200 \times 3 = 600 \text{ km}$ (1)

$\longrightarrow (2)$

$\frac{600}{4} = 150 \text{ kmh}^{-1}$ (1)

20)



$\longrightarrow (2)$

21) $\frac{4}{2a} + \frac{3}{2a} = \frac{7}{2a}$

(1)

$\longrightarrow (2)$

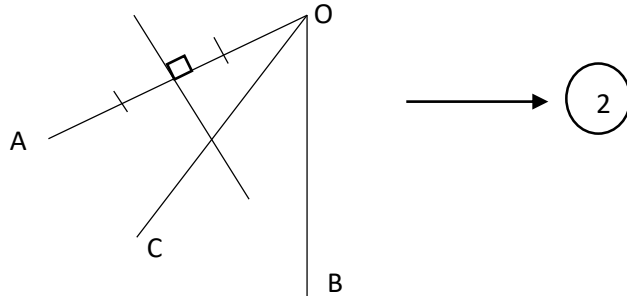
22) $35 \times 4 = 140 \text{ cm}^2 \longrightarrow (2)$

(1)

23) $AD = BC$ හෝ $AB \parallel DC \longrightarrow (2)$

24) $(2x - 5)(2x + 5) \longrightarrow (2)$

25)



B කොටස

01)

I) $\frac{3}{8} \longrightarrow (1)$

II) $\frac{3}{8} \times \frac{1}{3} = \frac{1}{8}$
 $(1) \quad (1) \longrightarrow (2)$

III) $\frac{3}{8} \times \frac{2}{3} = \frac{1}{4}$ හෝ $\frac{5}{8} + \frac{1}{8} = \frac{6}{8} (1)$
 $(1) \quad (1)$ ඉතිරිය $\frac{4}{8} = \frac{1}{4} (1)$

$\frac{1}{4} \longrightarrow 25\,000 (1)$
 මුළු මුදල = $25\,000 \times 4 = 100\,000 (1) \longrightarrow (4)$

IV)

$\frac{9}{100} \times 100\,000 = 9000$ හෝ $\frac{109}{100} \times 100\,000 = 109\,000$
 $(1) \quad (1)$ $(2) \quad (1)$
 මුළු මුදල = $109\,000$
 $(1) \longrightarrow (3)$

02)

I) $\frac{1}{4} \times 2 \times \frac{22}{7} \times 14 = 22 \text{ cm}$ $\longrightarrow$ (3)

(1) (1) (1)

II) $22 + 14 + 14 + 22 + 20 = 92 \text{ cm}$ $\longrightarrow$ (2)

(1) (1)

III) $\frac{1}{4} \times \frac{22}{7} \times 14 \times 14 = 154 \text{ cm}^2$ $\longrightarrow$ (2)

(1) (1)

IV) $154 \times 2 = 308$ (1)

$\frac{1}{2} \times 14 \times 14 = 98$ (1)

$308 + 98 = 406 \text{ cm}^2$ (1) $\longrightarrow$ (3)

10

03)

I) $12 \times 10 = 120$ $\longrightarrow$ (2)

(1) (1)

II) $12 \times 4 = 48$ (1)

$120 - 48 = 72$

$\frac{72}{9} = 8$ (1)

අමතර දින 2 (1) $\longrightarrow$ (3)

IV) $2500 \times 12 \times 10 = 300\,000$ $\longrightarrow$ (2)

(1) (1)

V) $56\,000 \times 5 = 280\,000$ (2)

ලාභය රුපියල් 20\,000 (1) $\longrightarrow$ (3)

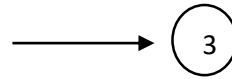
10

04)

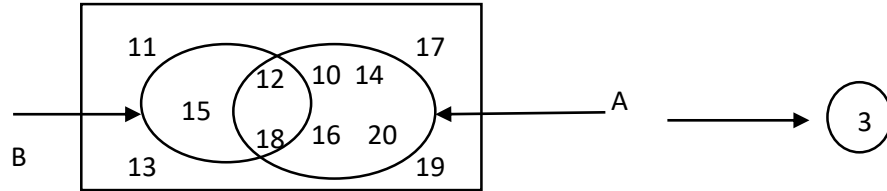
I) $\varepsilon = \{10,11,12,13,14,15,16,17,18,19,20\}$

$A = \{10,12,14,16,18,20\}$

$B = \{12,15,18\}$

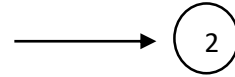


II)

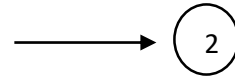


III) $(A \cup B)^c = \{11,13,17,19\}$

$(A \cup B)^c = \{10\text{න් } 20\text{න් අතර ප්‍රථමක සංඛ්‍යා}\}$



IV) $\{x: x \text{ ප්‍රථමක සංඛ්‍යාවකි ; } 10 < x < 20\}$



10

05)

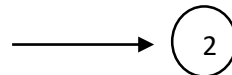
I) $\frac{1}{4}$

II) $900 \times 4 = 3600$

III) $90 + 60 = 150$

$180 - 150 = 210$

$\frac{210}{3} = 70^\circ$



IV) පිටු 120 පොත් ගණන = $70 \times 2 \times 10 = 1400$ හෝ

$70 \times 2 \times 10 \times 200 \times \frac{115}{100}$



$1400 \times 200 = 280\,000$



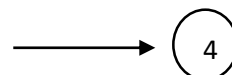
$= 322\,000$



$280\,000 \times \frac{15}{100} = 42\,000$



$280\,000 + 42\,000 = 322\,000$



10

A කොටස

01) $1\,425\,000 - 500\,000 = 925\,000$

1

ආදායම් බද්ද

$\frac{4}{100} \times 500\,000 = 20\,000$

→ 2

$\frac{8}{100} \times 425\,000 = 34\,000$

→ 2

වරිපතම් බද්ද

$\frac{9}{100} \times 40\,000 = 3\,600$

→ 2

මුළු බදු ප්‍රමාණය = $20\,000 + 34\,000 + 3\,600 = 57\,600$

1

ඉතිරි මුදල = $1\,425\,000 - 57\,600 = 1\,367\,400$

1

1

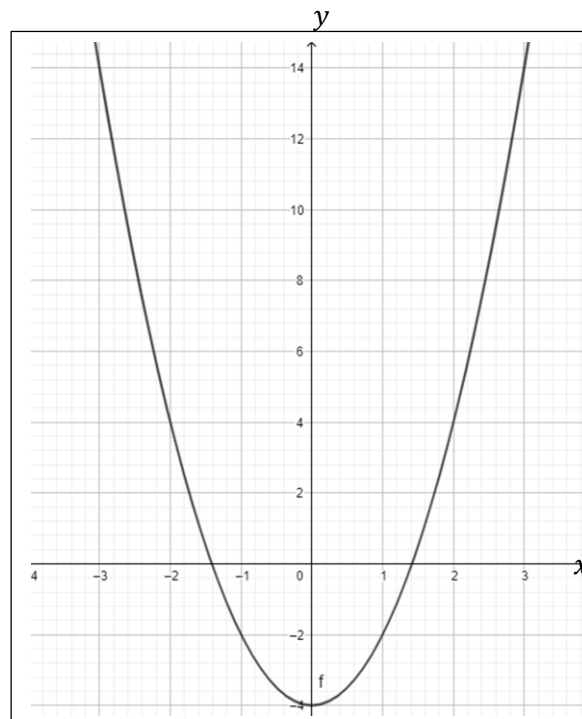
10

02) a)

I) -4

→ 1

II



→ 3

4

4

b)

I) අවම අගය -4 , ශීර්ෂයේ ඛණ්ඩාංක (0, -4)

→ 2

II -1.4 , +1.4

→ 2

III) $-3 < x < -1.4$

→ 2

6

10

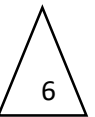
03 I) $500x + 700y = 142\,000 \longrightarrow (1)$
 $x - y = 20 \longrightarrow (2) \longrightarrow (2)$

$5x + 7y = 1\,420 \longrightarrow (3)$
 $5x - 5y = 1\,000 \longrightarrow (4)$

$(3) - (4)$
 $12y = 1\,320 \longrightarrow (1)$
 $y = \frac{1\,320}{12}$
 $y = 110 \longrightarrow (1)$

$y = 110$ (2) හි ආදේශයෙන්,
 $x - 110 = 20 \longrightarrow (1)$
 $x = 130 \longrightarrow (1)$

සම්බා වී කිලෝග්‍රෑම්යක මිල රුපියල් 130 හා නාඩු වී කිලෝග්‍රෑම්යක මිල රුපියල් 110 ක් වේ. $\longrightarrow (1)$

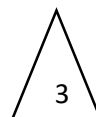


II) සම්බා වී කිලෝ ගණන හා නාඩු වී කිලෝ ගණන a නම්,

$110a + 130a = 12\,000$ (1)
(1)
 $240a = 12\,000$

$a = 50$

එක් වී මිටියක ස්කන්ධය $= 50\text{ kg}$ (1)



10

04)

I) $(a + b)^2 = a^2 + 2ab + b^2 \longrightarrow (2)$

II) $(2a + 3b)^2 = (2a)^2 + (2)(2a)(3b) + (3b)^2$
 $(2a + 3b)^2 = 4a^2 + 12ab + 9b^2 \longrightarrow (2)$

III) $(103)^2 = (100 + 3)^2$
 $= (100)^2 + (2)(100)(3) + (3)^2$
 $= 10\,000 + 600 + 9 \longrightarrow (3)$
 $= 10\,609$

IV) $5a^2 - 125 = 5(a^2 - 25)$
 $= 5(a - 5)(a + 5) \longrightarrow \textcircled{3}$

10

05)

I) A සිට B දක්වා වේගය ,

$$\frac{45}{30} \times 60 = 90 \text{ kmh}^{-1}$$

$\textcircled{1} \quad \textcircled{1} \longrightarrow \textcircled{2}$

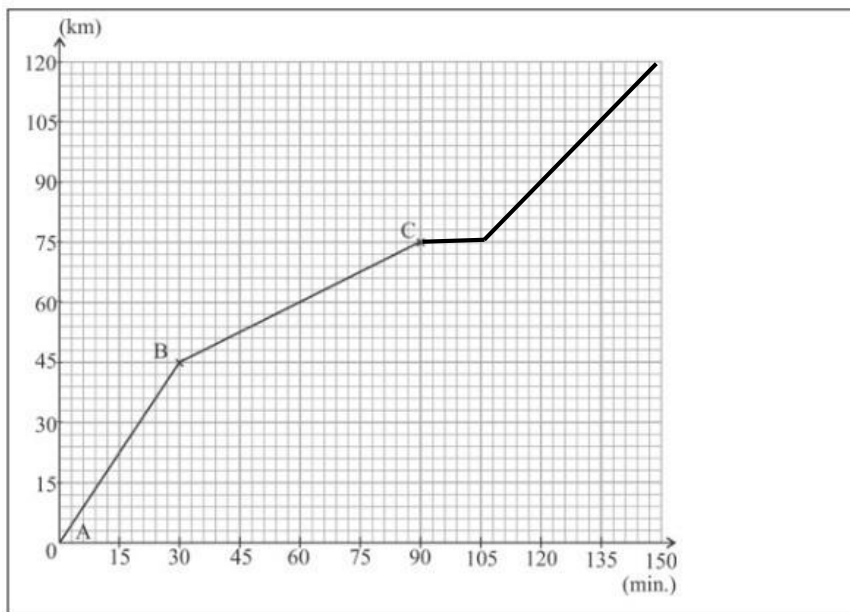
II) B සිට C දක්වා වේගය ,

$$\frac{30}{60} \times 60 = 30 \text{ kmh}^{-1} \quad \textcircled{1}$$

A සිට B දක්වා වේගය : B සිට C දක්වා වේගය ,

$$\begin{array}{ccc} 90 & : & 30 \quad \textcircled{1} \\ 3 & : & 1 \quad \textcircled{1} \end{array} \longrightarrow \textcircled{3}$$

III)



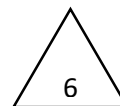
$\longrightarrow \textcircled{2}$

IV) ගමනේ මධ්‍යක වේගය $= \frac{120}{150} \times 60 = 48 \text{ kmh}^{-1}$

$\textcircled{2} \quad \textcircled{1} \longrightarrow \textcircled{3}$

10

06) I) $x^2 + 7x - 18 = 0$
 $x^2 + 9x - 2x - 18 = 0$ (1)
 $(x + 9)(x - 2) = 0$ (2)
 $x + 9 = 0$ හෝ $x - 2 = 0$ (1)
 $x = -9$ හෝ $x = 2$ (2)



II) $\frac{2}{(a+2)} + \frac{3}{(a^2-4)}$
 $\frac{2}{(a+2)} + \frac{3}{(a-2)(a+2)}$ (1)
 $\frac{2(a-2)}{(a+2)(a-2)} + \frac{3}{(a-2)(a+2)}$ (1)
 $\frac{2a-4}{(a+2)(a-2)} + \frac{3}{(a-2)(a+2)}$ (1)
 $\frac{2a-1}{(a+2)(a-2)}$ (1)



10

07)

I) $\lg 75 + \lg 4 - \lg 3 = \lg \frac{75 \times 4}{3}$ (1)
 $= \lg 100$
 $= 2$ (1) $\longrightarrow$ (2)

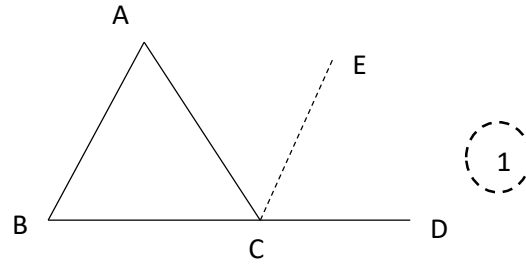
II) $\log_3 x + \log_3 6 = \log_3 9 + \log_3 2$
 $\log_3 6x = \log_3 9 \times 2$ (1)
 $6x = 18$ (1)
 $x = 3$ (1) $\longrightarrow$ (3)

III)

$\lg \left(\frac{12.5 \times 7.864}{3.25} \right)$
 $\lg 12.5 + \lg 7.864 - \lg 3.25$ (1)
 $1.0969 + 0.8956 - 0.5119$ (2)
 1.4806 (1)
 30.24 (1) $\longrightarrow$ (5)

10

08) a)



දත්තය : ABC ත්‍රිකෝණයේ BC පාදය D තෙක් දික් කර ඇත.

සා.ක.යු.: $\hat{ABC} + \hat{BAC} = \hat{ACD}$ බව

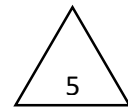
නිර්මාණය : AB පාදයට සමාන්තරව C හරහා CE රේඛාව ඇඳීම (1)

සාධනය: $\hat{ABC} = \hat{ECD}$ (අනුරූප කෝණ) (1)

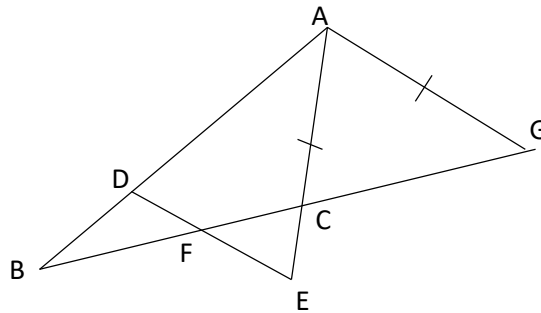
$\hat{BAC} = \hat{ACE}$ (එකාන්තර කෝණ) (1)

$\hat{ABC} + \hat{BAC} = \hat{ECD} + \hat{ACE}$ (ප්‍ර.අ.) (1)

$\hat{ABC} + \hat{BAC} = \hat{ACD}$



b)



$\hat{ABF} = \hat{AEF}$ (දත්තය)

$\hat{DFB} = \hat{CFE}$ (ප්‍රතිමුඛ කෝණ) (1)

$\hat{ABF} + \hat{DFB} = \hat{ADF}$ (ත්‍රිකෝණයක පාදයක් දික් කිරීමෙන් සෑදෙන බාහිර කෝණය අභ්‍යන්තර සම්මුඛ කෝණ දෙකෙහි එකතුවට සමාන වේ) (1)

$\hat{AEF} + \hat{CFE} = \hat{ACG}$ (ත්‍රිකෝණයක පාදයක් දික් කිරීමෙන් සෑදෙන බාහිර කෝණය අභ්‍යන්තර සම්මුඛ කෝණ දෙකෙහි එකතුවට සමාන වේ) (1)

$\hat{ADF} = \hat{ACG}$ (ප්‍ර.අ.) (1)

$\hat{ACG} = \hat{AGC}$ ($AC = AG$) (1)

$\hat{ADF} = \hat{AGC}$



09) I) $Q\hat{P}S + R\hat{Q}P = 180^\circ$ (1)

$Q\hat{P}S = 120^\circ$

$P\hat{T}S + P\hat{S}T = 120^\circ$ (ත්‍රිකෝණයක පාදයක් දික් කිරීමෙන් සෑදෙන බාහිර කෝණය අභ්‍යන්තර සම්මුඛ කෝණ දෙකෙහි ඓක්‍යයට සමාන වේ)

$P\hat{T}S = 120^\circ - 55^\circ$ (1)

$P\hat{T}S = 65^\circ$ (1)

II) $P\hat{R}S = Q\hat{P}R$ (ඒකාන්තර කෝණ) (1)

$P\hat{R}S = 65^\circ$ (1)

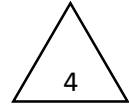
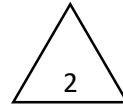
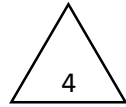
III) $R\hat{P}S = P\hat{S}T = 55^\circ$

එහෙත් ඒවා ඒකාන්තර කෝණ වේ

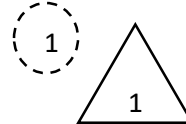
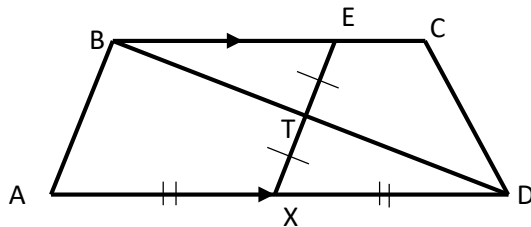
$\therefore RP \parallel ST$ (1)

$RS \parallel PT$ (දත්තය) (1)

$\therefore PRST$ සමාන්තරාස්‍රයකි. (සම්මුඛ පාද යුගල සමාන්තර නිසා) (1)



10) I)



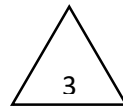
II) BET සහ TXD ත්‍රිකෝණවල

$ET = TX$ (දත්තය)

$E\hat{B}T = T\hat{D}X$ (ඒකාන්තර කෝණ) (1)

$B\hat{E}T = T\hat{X}D$ (ඒකාන්තර කෝණ) (1)

$BET \equiv TXD$ (කෝ. කෝ. පා.) (1)



III) $BE = XD$ (අංගසම ත්‍රිකෝණවල අනුරූප අංග) (1)

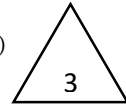
$AX = XD$ (දත්තය) (1)

$\therefore BE = AX$

$BE \parallel AX$ (දත්තය)

$\therefore ABEX$ සමාන්තරාස්‍රයක් වේ (එක් සම්මුඛ පාද යුගලක් සමාන හා සමාන්තර වේ.)

(1)



IV) $AB = XE$ (සමාන්තරාස්‍රයේ සම්මුඛ පාද)

$XE = 2XT$ (T, මධ්‍ය ලක්ෂ්‍යය)

(1)

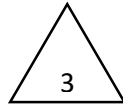
$\therefore AB = 2XT$

(1)

$\therefore AB : XT$

2 : 1

(1)



10

11) I)

$F\hat{O}E = 30^\circ$ (ප්‍රතිමුඛ කෝණ)

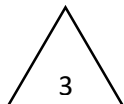
(1)

$O\hat{E}D = 30^\circ + 70^\circ$ (ත්‍රිකෝණයක පාදයක් දික් කිරීමෙන් සෑදෙන බාහිර කෝණය අභ්‍යන්තර සම්මුඛ කෝණ දෙකෙහි ඵෙකායට සමාන වේ)

(1)

$O\hat{E}D = 100^\circ$

(1)



II)

$F\hat{E}O = 80^\circ$

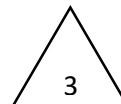
(1)

$E\hat{O}D = E\hat{D}O$ ($EO = ED$)

(1)

$E\hat{O}D = 40^\circ$

(1)



III) $O\hat{G}E = 90^\circ$ (සමද්විපාද ත්‍රිකෝණයක ශීර්ෂයේ සිට සම්මුඛ පාදයේ මධ්‍ය ලක්ෂ්‍යයට ඇඳි රේඛාව)

(1)

(1)



IV)

$O\hat{E}G = D\hat{E}G = 50^\circ$

(1)

$\therefore O\hat{C}G = 50^\circ$

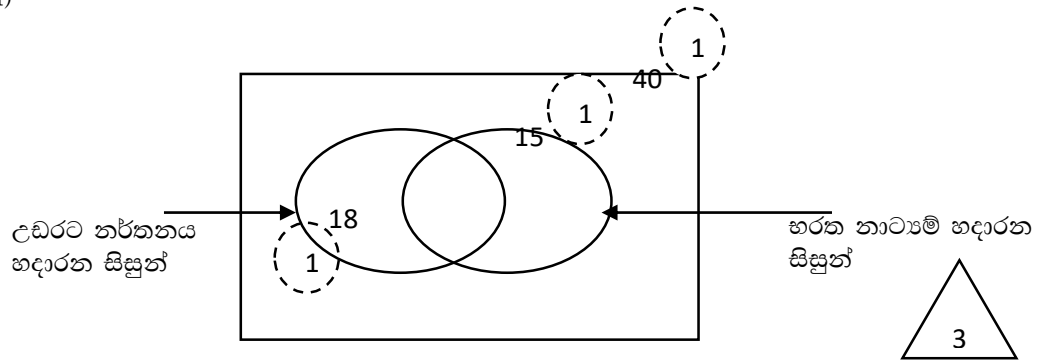
$\therefore C\hat{O}G = 40^\circ$

(1)

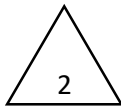


10

12) I)



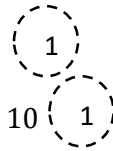
II) $15 + 18 = 33$ (1)
 $40 - 33 = 7$ (1)



III) $\frac{15}{3} = 5$ (1)

හරන නාට්‍යම් පමණක් හදාරන සිසුන් ගණන = 5

නර්තන ශෛලීන් දෙකම හදාරන සිසුන් ගණන = 10



IV) $\text{උඩරට නර්තනය හදාරන සිසුන් ගණන} = 18 + 10 = 28$ (1)

$\frac{28}{40}$ (1)

