

වගන්ති - A

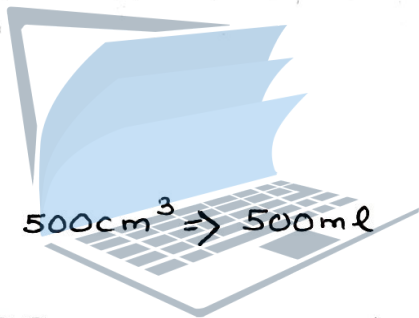
1. $\text{Rs } 500 - \text{Rs } 150 = \text{Rs } 350$

2. $2x + 3 = 15$
 $2x = 12$
 $x = 6$

3. $\frac{1}{7}$

4. $x + 2y + 3z = 40$
 $3x + 2y + z = 80$

 $4x + 4y + 4z = 120$
 $x + y + z = 30$
 $\frac{x+y+z}{3} = 10$



5. $1\text{cm}^3 \Rightarrow 1\text{ml}$

$10\text{cm} \times 10\text{cm} \times 5\text{cm} = 500\text{cm}^3 \Rightarrow 500\text{ml}$

6. $\frac{60\text{ km}}{1 \times 60 \text{ කිමී/වැ.}} \times 20 \text{ කිමී/වැ.} = 20\text{km} = 20,000\text{m}$

7. $a = \frac{180^\circ - 60^\circ}{2} = 50^\circ$

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8. $\left(\frac{6}{2}\right)^2 = 9$

$x^2 + 6x + 9 = (x+3)^2$

9. $5 \in A$ $\{2, 7\} \subseteq A$

10.
$$\begin{array}{r|l} 2 & 12, 18 \\ \hline 3 & 6, 9 \\ \hline 2 & 2, 3 \\ \hline 3 & 1, 3 \\ \hline & 1, 1 \end{array}$$

ලගු.ව.පි = $2 \times 2 \times 3 \times 3 = 36$

$12 = 2 \times 2 \times 3$
 $18 = 2 \times 3 \times 3$

ලගු.ව.පි = $2 \times 3 \times 2 \times 3 = 36$

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$$11) x^2 - y^2 = (x-y)(x+y)$$

$$r = p \times q \quad 2$$

$$r = pq$$

$$12) x = 0, y = 1$$

$$y = 1$$

$$\therefore A \equiv (0, 1)$$

$$13) 24 \times 18 \text{ cm}^2$$

$$= 432 \text{ cm}^2$$

14)



$$15) 1 = a + (n-1)d$$

$$\frac{(1-a)}{(n-1)} = d$$

$$16) x = 180 - 170 = 10 \text{ } (\text{Angle})$$

$$17) \frac{6000 \times 4 \text{ yr}}{2} = 4000 \times x \text{ yr}$$

$$x = 3 \text{ yr}$$

$$18) AB = DC, \quad \frac{1}{2}(AB+DC) \times AN = \frac{1}{2}(AD+BC) \times AM$$

$$AD = BC$$

$$2 \times 12 \times 6 = 2 \times 8 \times AM$$

$$AM = 9 \text{ cm}$$

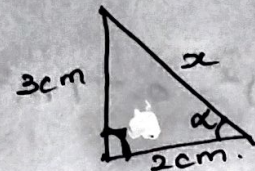
$$19) \left(\frac{27}{64}\right)^{2/3} = \left(\frac{3^3}{4^3}\right)^{2/3} = \frac{3^2}{4^2} = \frac{9}{16}$$

$$20) BX = YC = 4 \text{ cm}$$

$$XY = BC = 12 \text{ cm}$$

$$\therefore \text{Perimeter} = 4 + 6 + 4 + 12 = 26 \text{ cm}$$

21) $\text{Rs } \frac{12000}{800} = \text{Rs } 15$

22) 

$$x = \sqrt{3^2 + 2^2} = \sqrt{13}$$

$$\cos \alpha = \frac{2}{\sqrt{13}}$$

23) $\text{මිනුම} = Q_2 = 7$
 $\text{මධ්‍යය} = \frac{3+4+7+7+8}{5} = 5.8$

24) $\hat{PST} = \hat{PQR}$ (මකුණුපිහිටි කෝණය)
 $\hat{SRQ} + \hat{PQR} = 180^\circ$
 $\hat{PQR} = 110^\circ$
 $\therefore \hat{PST} = 110^\circ$

25) $\frac{1}{6} + \frac{1}{2} + \frac{1}{3} = 1 \therefore 2, 3, 6$

ප්‍රශ්න 1-A

- ① i) $\frac{3}{4}$
 ii) $\frac{3}{4} \times \frac{2}{3} = \frac{1}{2}$
 iii) $1 - \left(\frac{1}{4} + \frac{1}{2}\right) = \frac{1}{4} \rightarrow$ ඉතිරි ප්‍රමාණයයි.
 iv) ඉතිරි ප්‍රමාණය ගෙවූ ප්‍රමාණය = $\frac{1}{4} \times \frac{1}{2} = \frac{1}{8}$

ගෙවූ ප්‍රමාණය = $\text{Rs } 125,000 \times 2$
 = $\text{Rs } 250,000$

ප්‍රතිශත ගෙවූ ප්‍රමාණය = $\text{Rs } \frac{250,000}{8}$
 = $\text{Rs } 31,250$

ftajf (v) ගෙවූ ප්‍රමාණය = ~~Rs 250,000~~

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2 (i) අර්දය = $r = \frac{1.4m}{2} = 0.7m$

(ii) උපරිමය = $1.4m \times 2m = 2.8m^2$

(iii) $\frac{1}{2}$ වෘත්ත උපරිමය = $\frac{1}{2} \pi r^2 = \frac{1}{2} \times \frac{22}{7} \times (0.7)^2 = 0.77m^2$

(iv) මුළු උපරිමය = $2.8m^2 + 0.77m^2 = 3.57m^2$

(v) ඉලක්කය = $3.57 \times 350 = \text{₹} 1249.50$

සමුදායය = $\text{₹} 1249.50 \times 2 = \text{₹} 2499$
 $\underline{\text{₹} 2500}$

3 (i) $\text{₹} 3000 \times \frac{5}{100} = \text{₹} 150$

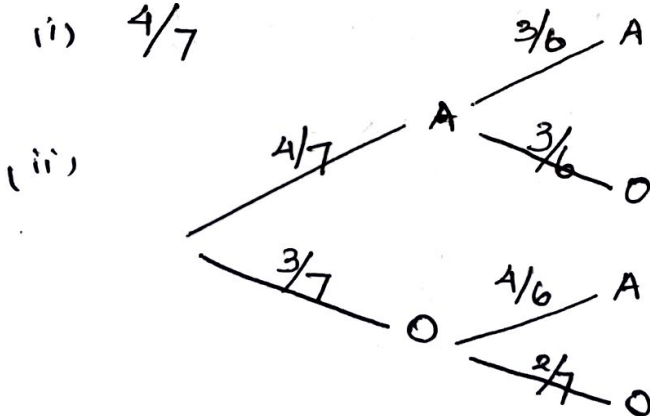
(ii) $\text{₹} 3500 \times \frac{5}{100} = \text{₹} 175$

(iii) $\text{₹} 6500 \times \frac{10}{100} = \text{₹} 650$

(iv) මෙහෙයුම් පහසය = $\text{₹}(6500 - 650) = \text{₹} 5850$

(v) නිකුත් කිරීමේ වියදම = $\text{₹} 650 - \text{₹} 175 - \text{₹} 150 = \text{₹} 325$

4 (i) $\frac{4}{7}$



A - අවධානය

O - වෙනත්

(iv) $\frac{4}{7} \times \frac{3}{6} = \frac{2}{7}$

ftai f

(v) $\frac{4}{7} \times \frac{3}{6} + \frac{3}{7} \times \frac{4}{6} = \frac{2}{7} + \frac{2}{7} = \frac{4}{7}$ rhzfah

5

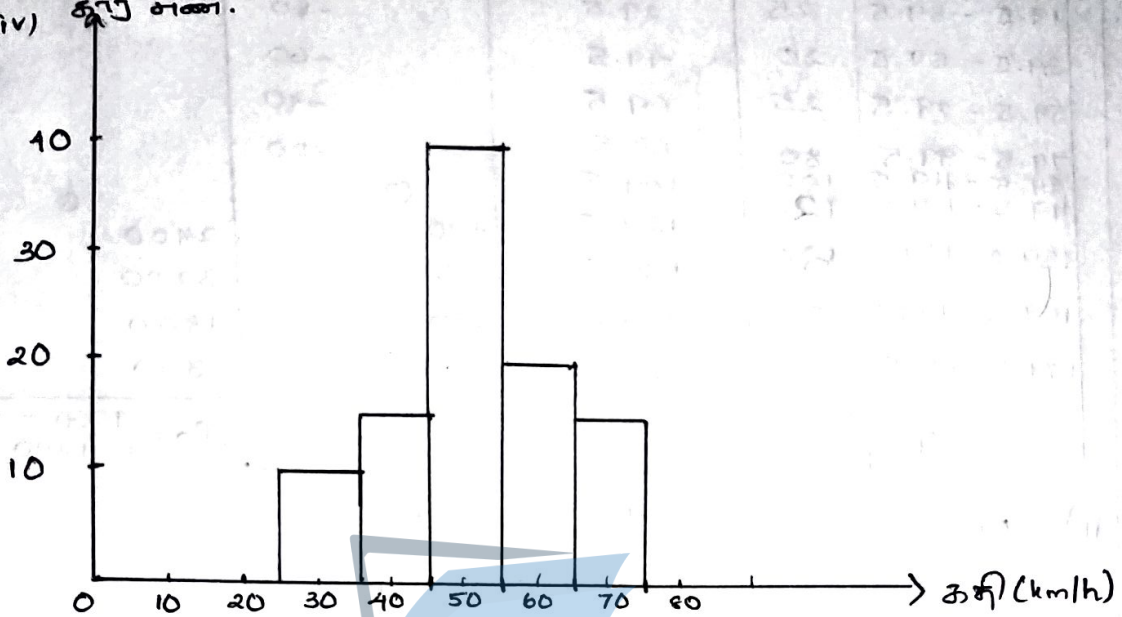
(i) 75 km/h

(ii) 25 km/h

5

(iii) $10 + 15 = 25$

(iv) අග්‍රය.

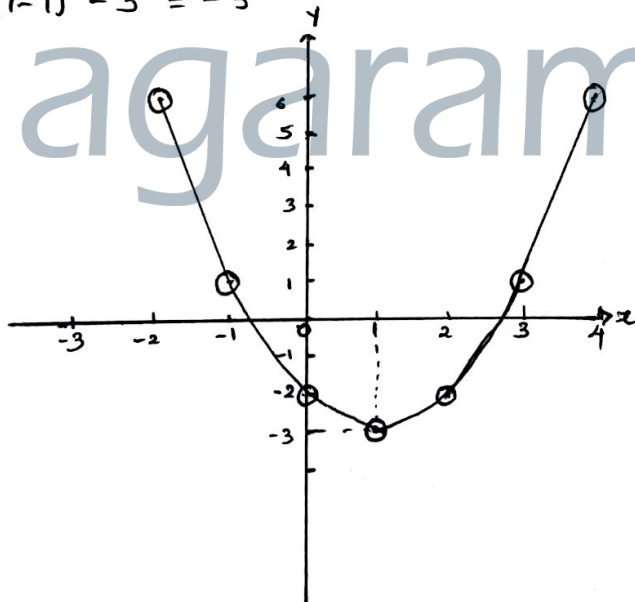


චිත්‍ර II-A

01) $x=1$ වුවද,

$$y = (x-1)^2 - 3$$

$$= (1-1)^2 - 3 = -3$$



b) (i) (1, -3)

(ii) $-0.7 < x < 2.7$

(iii) (1, 3)

ඉහත $\sqrt{3} + 1 = 2.7$

($\because \sqrt{3} + 1 > 0$)

ඉහත

$\sqrt{3} = 1.7$

02) (i) 120-139

(ii)

6

විස්ථාපන අන්තරය	f	මධ්‍යස්ථානය	ඛණය d	fd
19.5 - 39.5	25	29.5	-80	-2000
39.5 - 59.5	20	49.5	-60	-1200
59.5 - 79.5	25	69.5	-40	-1000
79.5 - 99.5	80	89.5	-20	-1600
99.5 - 119.5	100	109.5	0	0
119.5 - 139.5	120	129.5	+20	2400
139.5 - 159.5	80	149.5	+40	3200
159.5 - 179.5	30	169.5	+60	1800
179.5 - 199.5	20	189.5	+80	1600
$\Sigma f =$	500			$\Sigma fd = 9000 - 4800 = 4200$

ii) ඉහළින් වන අගය = $109.5 + \frac{4200}{500}$

= $109.5 + 8.4$

= 117.9

iii) $\text{L}(240 + 17 \times 117.9)$

= $\text{L} 2244.30$

iv) $\text{L} 2244.30 \times 500 = \text{L} 1,122,150$

03) J21 → $\text{L} 650,000$

J14 → $\text{L} 450,000$

J8 → $\text{L} 400,000$

i) J21 : J14 : J8

65 : 45 : 40

13 : 9 : 8

ii) $\frac{\text{L} 33600}{8} \times 30 = \text{L} 126,000$

iii) ඔහුට $\text{L} 2$ ගණන,

$(x - 100,000) \times \frac{80}{100} = \text{L} 126,000$

ඔහුට $x = \text{L} 257,500$

iv) J21 වෙහෙර ඔහුට = $100,000 + 126,000 \times \frac{13}{30}$

= $\text{L} 154,600$

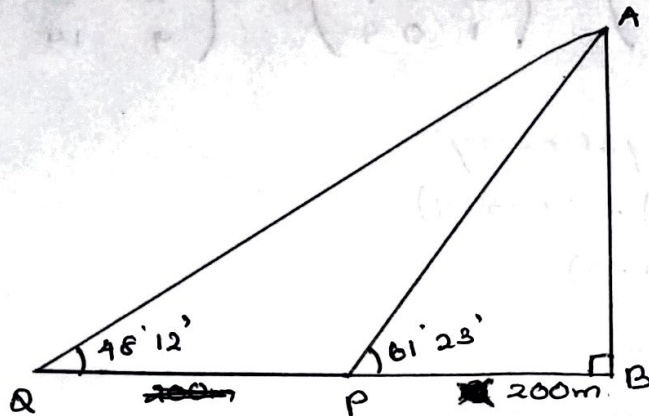
ftoi f

J14 වෙහෙර ඔහුට = $157,500 \times 0.2 + 126,000 \times \frac{13}{30}$

= $\text{L} 69,300$

$$\begin{aligned}
 \text{v) } \text{പുറം തിരിച്ചറിയൽ} &= \frac{154,600}{8} \\
 &= 19325 \\
 \text{പുറംതുക} &= 19325 \times 4 \\
 &= \text{₹} 77,300
 \end{aligned}$$

04)



$$\text{ii) } AB = \tan(48^\circ 12') \times (200 + x)$$

$$AB = \tan(61^\circ 23') \times x$$

$$AB = \tan(61^\circ 23') \times 200$$

$$= 1.8328 \times 200$$

$$= 366.56 \text{ m.}$$

$$1.1184 (200 + x) = 1.8328 x$$

$$0.7144 x = 223.68$$

$$x = 313.11 \text{ m.}$$

$$\text{iii) } \tan(48^\circ 12') = \frac{366.56}{200 + PQ}$$

$$AB = \tan(61^\circ 23') \times 313.11$$

$$= 1.8328 \times 313.11$$

$$= 573.87 \text{ m}$$

$$200 + PQ = \frac{366.56}{1.1184}$$

$$1.1184$$

$$PQ = 327.75 - 200$$

$$PQ = 127.75 \text{ m}$$

$$\text{iv) } \tan \theta = \frac{366.56}{327.75 + 150}$$

$$= \frac{366.56}{477.75}$$

$$\tan \theta = 0.7673$$

$$= 37^\circ 30'$$

$$\text{05) } \text{ii) } 3x + 2y = 54$$

$$y = 2x - 1$$

$$\text{(ii) } 3x + 2(2x - 1) = 54$$

$$7x = 56$$

$$x = 8$$

$$y = 15$$

$$\text{ftai f } \text{പുറംതുക} = \text{₹} x = \text{₹} 8$$

$$\text{അടിസ്ഥാനം} = \text{₹} 15$$

rhzfah

$$b) A+B = \begin{pmatrix} 1 & 2 & 3 \\ 0 & 3 & 4 \\ 5 & 7 & 1 \end{pmatrix} + \begin{pmatrix} 3 & 2 & 0 \\ 0 & 1 & 1 \\ 8 & 0 & 4 \end{pmatrix} = \begin{pmatrix} 4 & 4 & 3 \\ 0 & 4 & 5 \\ 6 & 7 & 5 \end{pmatrix}$$

$$2A-B = 2 \begin{pmatrix} 1 & 2 & 3 \\ 0 & 3 & 4 \\ 5 & 7 & 1 \end{pmatrix} - \begin{pmatrix} 3 & 2 & 0 \\ 0 & 1 & 1 \\ 8 & 0 & 4 \end{pmatrix} = \begin{pmatrix} 0 & 2 & 6 \\ 2 & 5 & 7 \\ 9 & 14 & -2 \end{pmatrix}$$

$$0b) a) (i) 2x^2 - xy + 6x - 3y$$

$$= x(2x-y) + 3(2x-y)$$

$$= (2x-y)(x+3)$$

$$(ii) 6x^2 + x - 15$$

$$= 6x^2 + 10x - 9x - 15$$

$$= 2x(3x+5) - 3(3x+5)$$

$$= (3x+5)(2x-3)$$

$$b) \frac{1}{2} (x-1+x+5) \times (x-4) = 72$$

$$\Rightarrow (x+2)(x-4) = 72$$

$$x^2 - 2x - 80 = 0$$

$$07) (i) 4+4 = 8 \text{ m.}$$

$$(ii) 5+5 = 10 \text{ m}$$

$$(iii) 6, 8, 10, \dots$$

$$T_2 - T_1 = 8 - 6$$

$$= 2$$

$$T_3 - T_2 = 10 - 8$$

$$= 2$$

\therefore එක උළුවක් වෙනස්වීමේ අන්තරය 2 වේ.

$$(iv) S = \frac{n}{2} \{2a + (n-1)d\}$$

$$= \frac{20}{2} (12 + 19 \times 2)$$

$$= 500 \text{ m}$$

$$S = 0.5 \text{ km}$$

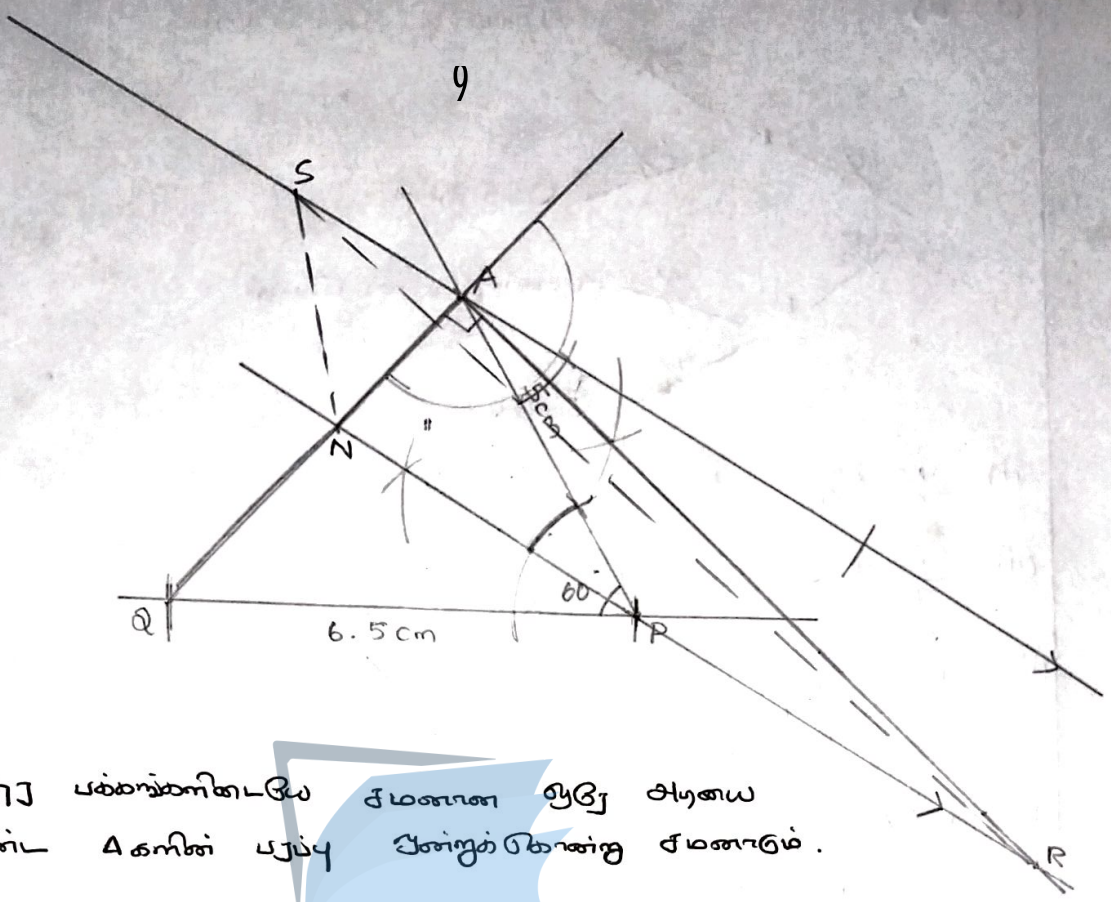
ftai f

\therefore 0.5 km බව පෙනේ.

rhzfah

08)

9



එකතුවේ පරිමාව සොයා ගැනීම සඳහා උපරි සඳහන් කර ඇති තොරතුරු භාවිත කරමින් පරිමාව සොයා ගන්න.

09) (i) $h = 6a$

(ii) $V_2 = \pi r^2 \cdot h$
 $= \pi a^2 \cdot 6a$
 $= 6\pi a^3$

(iii) $V_1 = \frac{2}{3} \pi r^3$
 $= \frac{2}{3} \pi a^3$



(iv) ඉතිරි ව $V = 6\pi a^3 - \frac{2}{3} \pi a^3$
 $= \frac{16\pi a^3}{3}$

(v) $V = \frac{16 \times 3.142 \times 9.57^3}{3}$

$\log V = \log \left(\frac{16 \times 3.142 \times 9.57^3}{3} \right)$

$= \log 16 + \log 3.142 + 3 \log 9.57 - \log 3$
 $= 1.2041 + 0.4972 + (3 \times 0.9809) - 0.4771$

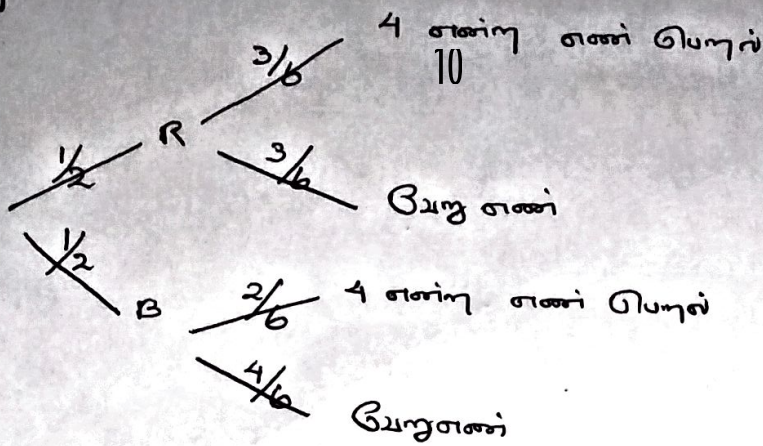
$= 4.1669$
 $= \text{Antilog}(4.1669)$

ftol f

$= 14687.25$

rhzfah

10) a)



(i) $\frac{1}{2} \times \frac{3}{6} = \frac{1}{4}$

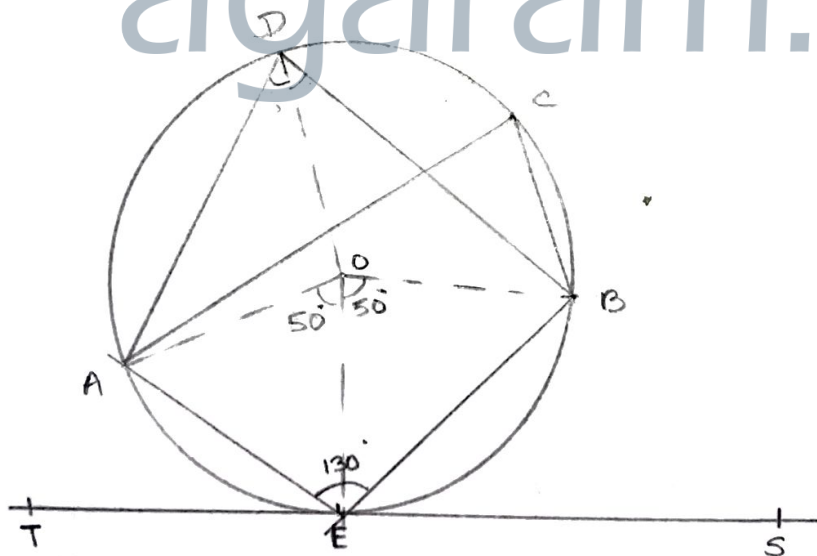
(ii) $\frac{1}{4} + \frac{1}{2} \times \frac{2}{6} = \frac{1}{4} + \frac{1}{6} = \frac{5}{12}$

(iii) $1 - \frac{5}{12} = \frac{7}{12}$

b) $n(A \cap B) = 0$

$n(A \cup B) = n(A) + n(B) - n(A \cap B)$
 $= 10 + 15 - 0$
 $= 25$

11) புலம் a) சுமயக்கோணம் = 2 x புரிக்கோணம்



(i) $360^\circ - 260^\circ = 100^\circ$

(ii) $\hat{A}DB = \hat{A}EB$

(iii) $\hat{A}ET = 90^\circ - 65^\circ = 25^\circ$

(iv) $\triangle OAE \cong \triangle OEB$ (L.A.S)

rhzfah