

Item 1

a) football :  $\frac{2}{5} \times 200 = 80$

Basketball :  $0.35 \times 200 = 70$

track race :  $\frac{15}{100} \times 200 = 30$

Support activities :  $200 - (80 + 70 + 30) = 20$

b) Cartons of water :  $\frac{150}{12} = 13$

Boxes of snacks :  $\frac{150}{8} = 19$

c) Before noticing offer

ps : Tshirts :  $30 \times 1.5 + 20 \times 0.75 = 60m$

After noticing offer

either : Buy 39 (3x13) Tshirts, receive 13 free Caps and buy 13 Caps:

$39 \times 1.5 + 13 \times 0.75 = 68.25m$

No saving

or

Buy 26 Caps (3x8+2), receive 8 free Tshirts and buy 31 Tshirts:

$26 \times 0.75 + 31 \times 1.5 = 66m$

No saving

1 Product  
1 output  
1 Product  
1 output  
1 Product  
1 output  
1 difference  
1 output



1. Asset  
1. output  
1. Asset  
1. output

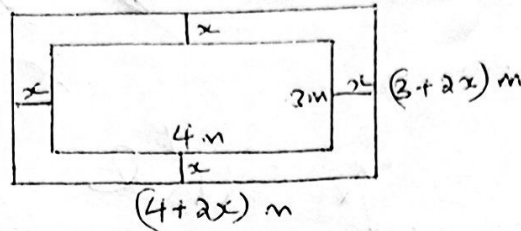
1 Sum  
1 output  
1 Tshirts bought  
1 Caps on offer  
1 Caps bought  
1 Sum  
1 output  
1 Comment

20

1 Caps bought  
1 Tshirts on offer  
1 Tshirts bought  
1 Sum  
1 output  
1 Comment

Item 2

a)



$$(4+2x)(3+2x) = 172$$

$$12 + 8x + 6x + 4x^2 = 172$$

$$2x^2 + 7x - 80 = 0$$

$$x = \frac{-7 \pm \sqrt{7^2 - 4(2)(-80)}}{2(2)}$$

$$= 4.8122, -8.3122$$

$$\text{width of deck} = 4.8122\text{m}$$

$$b) 5C + 20V = 400 \quad \text{--- (1)}$$

$$C + V = 50 \quad \text{--- (2)}$$

$$\text{(1) - 5(2): } 15V = 150$$

$$V = 10 \text{ Vans}$$

$$C = 40 \text{ Cars}$$

$$\text{Revenue from Cars: } 40 \times 4000 = 160,000$$

$$\text{ii Vans: } 10 \times 5000 = 50,000$$

$$\text{Parking revenue: } 160,000 + 50,000$$

$$= 210,000 \text{ Vhs}$$

$$c) \text{ Staff } x \quad \begin{array}{|c|c|c|} \hline 1 & 2 & 4 \\ \hline \end{array}$$

$$\text{Visitors } x \quad \begin{array}{|c|c|c|} \hline 10 & 15 & 50 \\ \hline \end{array}$$

$$\frac{2-1}{15-10} = \frac{4-1}{50-10}$$

$$\frac{1}{5} = \frac{4-1}{40}$$

$$4 = 9$$

$$\text{No. of visitors } = 9$$

Ans

x	1	2	3	4	5	6	7	8	9
y	10	15	20	25	30	35	40	45	50

$$\text{No. of visitors is } 9$$

Area Covered by pool side

expansion  
simplify  
Quadratic

Solving quadratic  
(accept complete eqn)

Possible values of x

output  
(accept 2dp)

Parking space

handling capacity

Solving

output

output

product

product

sum

output

linear relation / accept

simplify

linear

solving

x=50 to find

output

20

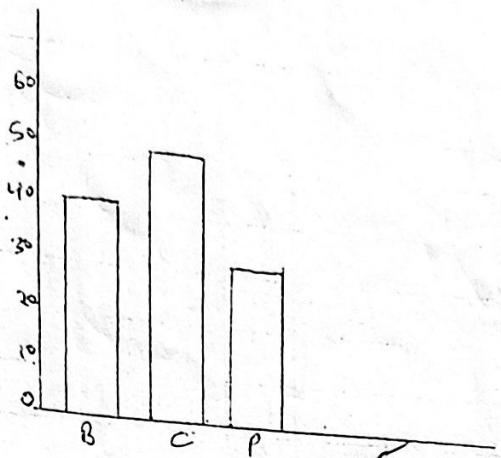
Pattern in staff no.

Pattern in visitors no.

output

# Item 3

Q) (i)

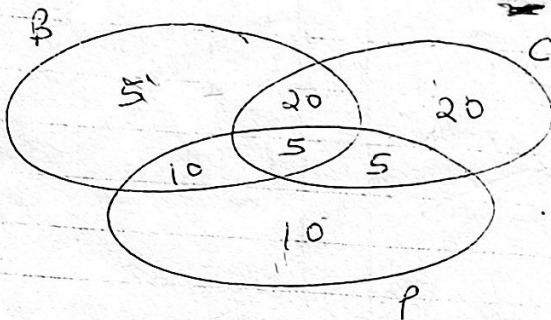


Q) (ii) Tables

Project	1	2
Tables	1	2

$1 \times 35 = 35$   
 $1 \times 60 = 60$   
 $120 = 2 \times 60$   
 60 tables  
 $\approx 18$

Q)



Candidates who like only one subject

$$\begin{aligned}
 B \text{ only} &= 5 \\
 C \text{ only} &= 20 \\
 P \text{ only} &= 10 \\
 5 + 20 + 10 &= 35
 \end{aligned}$$

c)

$$\frac{50}{120}$$

$$\frac{20}{25}$$

$$\frac{4}{7}$$

II each axis  
III each bar

(accept line graph, pie-chart)

I equivalent ratios

I output 2

I each region of the set diagram

$$\left( \frac{5}{20+05} \right) \times 100$$

$$7 \times 2$$

$$14$$

I sum

I output 4

I output

$$20$$



Dem of

a) possible number of round nets  
 $0.54 \times 291$   
 $= 157$  packs

possible no. of packs of rectangular  
 $0.46 \times 291$   
 $= 134$  packs

possible no. of round nets:  
 $157 \times 8$   
 $= 1256$  nets

possible no. of rectangular  
 $134 \times 7$   
 $= 938$  nets

total no. of nets sent  
 $1256 + 938$   
 $= 2194$  nets

no. of packs of 291  $\begin{pmatrix} 0.54 \\ 0.46 \end{pmatrix} = \begin{pmatrix} 157 \\ 134 \end{pmatrix}$   
 each

no. of nets:  $(8 \ 7) \begin{pmatrix} 157 \\ 134 \end{pmatrix} = 1256 + 938$   
 $= 2194$

(10)

1 product  
1 round packs

1 product  
1 rectangular packs

1 product  
1 round nets

1 product  
1 rectangular nets

1 sum  
1 out put

1 Column matrix of probabilities  
1 order of scalar multiple  
1 each scalar multiple  
1 product column matrix

1 order of matrix product  
1 row by column product  
1  $8 \times 7 + 7 \times 134$

1 each product (1256)  
1 sum of products

1 out put

accept

$$(157 \ 134) \begin{pmatrix} 8 \\ 7 \end{pmatrix}$$

b) Item 4

$$\begin{pmatrix} 402 \\ 256 \\ 460 \end{pmatrix} \begin{pmatrix} 329 \\ 314 \\ 410 \end{pmatrix} \begin{pmatrix} \frac{1}{2} \\ \frac{1}{4} \end{pmatrix}$$

$$\begin{pmatrix} 402 \times \frac{1}{2} + 329 \times \frac{1}{4} \\ 256 \times \frac{1}{2} + 314 \times \frac{1}{4} \\ 460 \times \frac{1}{2} + 410 \times \frac{1}{4} \end{pmatrix}$$

$$\begin{pmatrix} 283 \\ 207 \\ 333 \end{pmatrix}$$

$$283 + 207 + 333 = 823 \text{ mts}$$

1 order of matrix  
1 order of matrix product  
(allent  $(\frac{1}{2} \frac{1}{4})$   $\begin{pmatrix} 402 & 256 & 460 \\ 329 & 314 & 410 \end{pmatrix}$ )

1 each row by column product

1 ~~Req~~ of req for each village

1 sum  
1 sub prt

20

1000  
001  
100

# Item 5

a) face area:

$$3 \times 5 = 15$$

$$3 \times 2 = 6$$

$$2 \times 5 = 10$$

$$3 \times 5 = 15$$

$$2 \times 5 = 10$$

1 } each correct output

1

1

1

1

Total surface area:

$$15 + 6 + 10 + 15 + 10 = 56 \text{ m}^2$$

1 } sum of all face areas  
1 } output

Price of first 6 m<sup>2</sup>:  $6 \times 10,000$   
 $= 60,000 \text{ Vhx}$

1 } product  
1 } cost

Price of next 50 m<sup>2</sup>:  $50 \times \frac{90}{100} \times 10,000$   
 $= 450,000 \text{ Vhx}$

1 } product  
1 } cost

Total price:  $60,000 + 450,000$   
 $= 510,000 \text{ Vhx}$

1 } sum  
1 } output

b) Cost of stones:  $2.5 \times 100$   
 $= \$250$

1 } product  
1 } cost of stones

0708  
130  
338

Import tax:  $3.5 \times 2.5$   
 $= \$8.75$

1 } product  
1 } cost/tax

Total expenses:  $250 + 20 + 8.75$   
 $= \$278.75$

1 } sum  
1 } expenses in \$

$\$278.75 \times 3750$

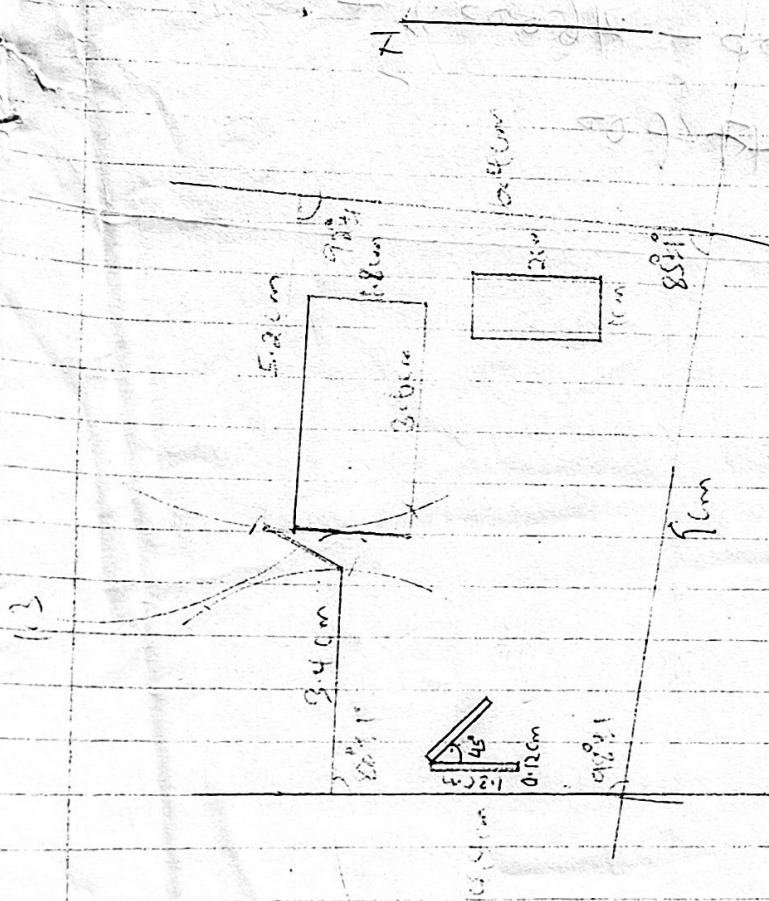
$= 1,045,312.5 \text{ Vhx}$

20

20



Item 6



(b) (5)

c) Only 4 that supports: health, socialisation, education and recreation

accurate length of support  
chagham

any 4  
acute angles of support-  
direction

each -  
Correct position of plans

each correct dimension

evidence of rotation through  $45^\circ$

Ally  
Stacy