

SAMPLE QUESTIONS PAPER TWO

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QUESTION ELEVEN

A survey was done amongst 200 secondary school learners requesting the amount of time they spent on any social networking web-site for a week. The following table shows the responses obtained.

Time in minutes	FREQUENCY	CUMULATIVE FREQUENCY
$0 < d \leq 15$	3	
$15 < d \leq 30$	37	
$30 < d \leq 45$	65	
$45 < d \leq 60$	49	
$60 < d \leq 75$	31	
$75 < d \leq 90$	13	
$90 < d \leq 105$	2	

- 11.1 Complete the frequency table in Diagram 3 found in the DIAGRAM sheet. (2)
 11.2 Represent the information by drawing an ogive curve. (2)
 11.3 Use your graph to determine the median time spent on these sites by the respondents. Indicate on your graph using the letter T where you would read off your answer. (1)
 11.4 Calculate the **approximate** mean amount of time spent by the learners per week on the sites. (2) [7]

QUESTION TWELVE

Given below is a table showing the monthly amount (x), a person pays for his household telephone and cellphone bill and the person's nett monthly income. The amounts illustrated are both given in Rands.

Amount (x)	200	380	620	925	1100
Income (y)	1500	2250	3900	5250	6500

- 12.1 Draw a scatter plot to represent the above data on the diagram sheet. (2)
 12.2 Draw the line of best fit for the given data on your graph. (1)
 12.3 Describe the general trend between the income of the individual and the amount spent on the telephone bill. (1) [4] TOTAL : 150

DIAGRAM SHEET

DIAGRAM 2

DIAGRAM 1

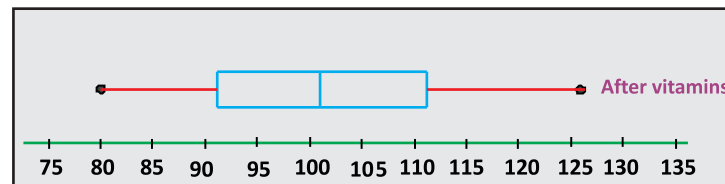
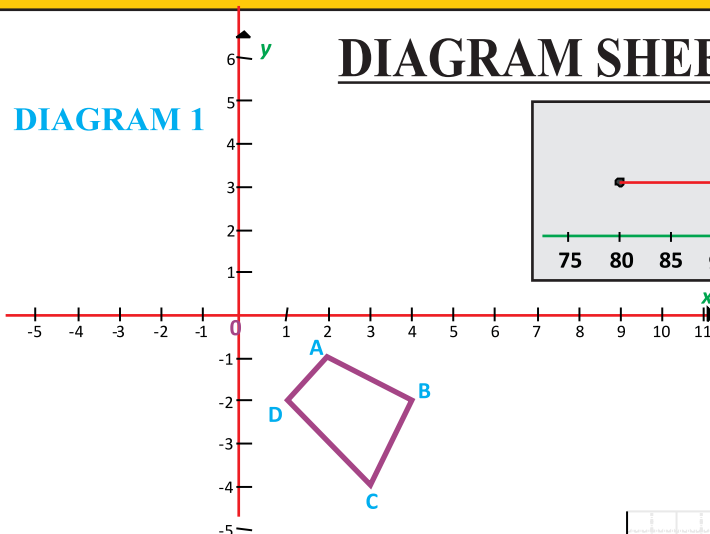
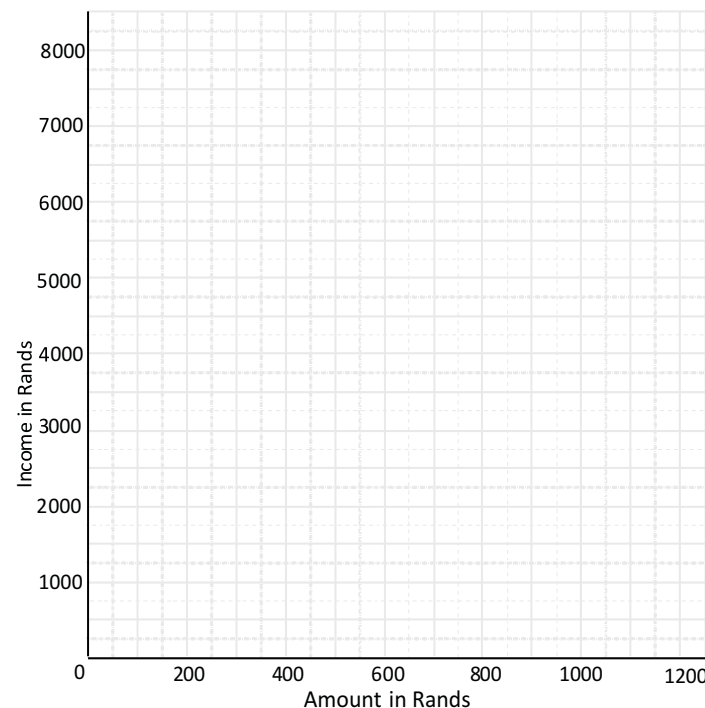


DIAGRAM 3

Time in minutes	FREQUENCY	CUMULATIVE FREQUENCY
$0 < d \leq 15$	3	
$15 < d \leq 30$	37	
$30 < d \leq 45$	65	
$45 < d \leq 60$	49	
$60 < d \leq 75$	31	
$75 < d \leq 90$	13	
$90 < d \leq 105$	2	

DIAGRAM 4



FORMULA SHEET

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

$$S_n = \frac{n}{2} (1 + n)$$

$$A = P(1 + ni)$$

$$S_n = \frac{n(n+1)}{2}$$

$$A = P(1 - ni)$$

$$S_n = \frac{n}{2} [2a + (n-1)d]$$

$$A = P(1 + i)^n$$

$$S_n = \frac{a(r^n - 1)}{r - 1}; r \neq 1$$

$$A = P(1 - i)^n$$

$$S_n = \frac{a(1 - r^n)}{1 - r}; r \neq 1$$

In $\triangle ABC$

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\sin^2 A + \sin^2 B = \sin^2 C$$

$$a^2 = b^2 + c^2 - 2bc \cos A$$

$$\sin A \cos B = \cos A \sin B$$

$$\text{area } \triangle ABC = \frac{1}{2} ab \sin C$$

$$P(A) = \frac{n(A)}{n(S)}$$

$$x^2 + y^2 = r^2$$

$$f'(x) = \lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$$

$$\cos^2 \theta + \sin^2 \theta = 1$$

$$d = \sqrt{(x_2 - x_1)^2 + (y_2 - y_1)^2}$$

$$\cos 2\theta = 1 - 2\sin^2 \theta$$

$$P(A \text{ of } B) = P(A) + P(B) - P(A \text{ and } B)$$

$$2\cos^2 \theta - 1 = \cos 2\theta$$

$$\hat{y} = a + bx$$

$$\sin 2\theta = 2\sin \theta \cos \theta$$

$$\bar{x} = \frac{\sum fx}{n}$$

$$\bar{x} = \frac{\sum x_i}{n}$$

$$b = \frac{\sum (x - \bar{x})(y - \bar{y})}{(x - \bar{x})^2}$$