

TEACHERS WITHOUT BORDERS PROGRAMME

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

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In Bill Gates words, at the Mandela Day 'Living Together' address: "Maintaining the quality of this country's higher education system while expanding access to more students will not be easy. But it's critical to South Africa's future" – working together, we can help achieve this."

Contributing schools to date:

Clifton School	Milnerton High	Rustenburg Girls' High	St Peter's
Durban Girls'	Northwood High	St Anne's DC	St Stithians
Fairmont High	Roedean	St John's DSG	Wynberg Boys' High
Herzlia High	Rondebosch Boys'	St Mary's DSG Kloof	Wynberg Secondary

Instructions:

- Answer all questions.
- All necessary working must be shown in its proper place with the answer.
- **CALCULATORS ARE ALLOWED TO BE USED.**
- Give answers to two decimal places, unless instructed otherwise.
- Blue or black pen must be used in answers although pencil may be used on diagrams.
- The use of correcting fluid is not allowed.
- This examination paper consists of 11 pages.

Question 1 (ANSWER THIS QUESTION ON THE DIAGRAM SHEET PROVIDED)

A travel bureau found that the price of a bus ticket to a certain town has an influence on the number of passengers who make use of the service.

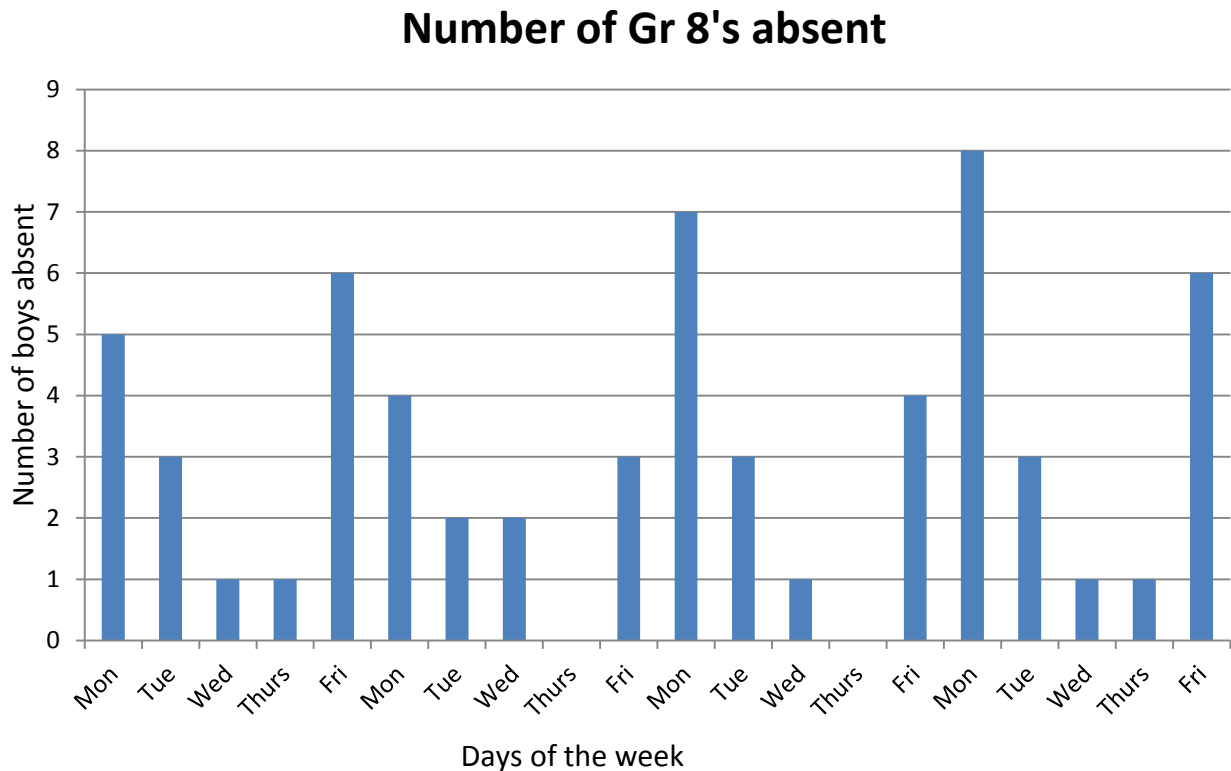
The table below shows the price of a bus ticket against the number of passengers:

Price of ticket (Rand)	Number of passengers
250	25
180	50
190	45
220	38
200	44
210	40
240	31

- 1.1 Draw a scatter plot to represent this data. (4)
- 1.2 Draw a line of best fit. (1)
- 1.3 Estimate the number of passengers if the price of a ticket is R230. (2)

Question 2

2.1 Given below is a bar graph that displays the number of days Grade 8 boys are absent from school during the month of February.



2.1.1 Determine the range. (1)

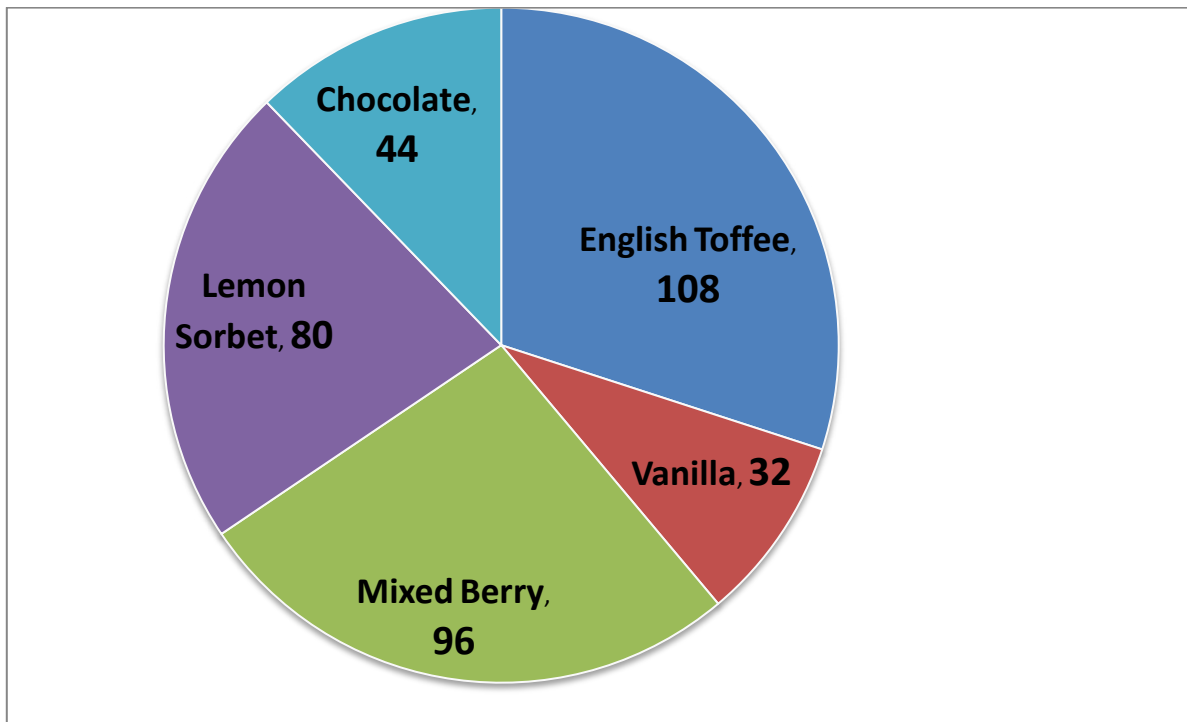
2.1.2 Determine the mean. (3)

2.1.3 Determine the median. (2)

2.1.4 Determine the mode. (1)

2.1.5 Which day of the week were the least amount of Grade 8 boys absent? (1)

2.2 The pie chart below shows the breakdown, **in degrees**, of the different flavours of frozen yoghurt that Diego sold on the first day in November.



If Diego sold 180 units on the first day of November, how **many units** of the English Toffee flavour did he sell? (3)
/11/

Question 3

Luke wants to attend the 2015 MTV's Video Music Awards (VMAs) which will be held in Los Angeles, California.

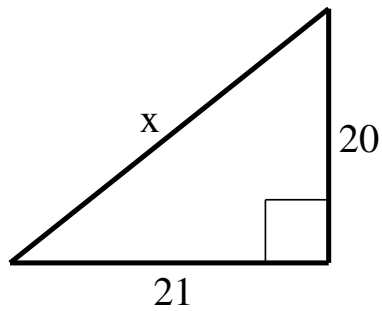
- 3.1 He wants to buy a VIP Limo Pass for \$900 to get dropped off at the red carpet. The exchange rate is R10,93 to the US Dollar (\$). How much will he pay for the ticket in South African Rand? (2)
- 3.2 Bolnick Travel Agency is offering a package deal for South Africans who wants to attend the VMAs which includes your flight tickets with United Airlines and 5 nights at the Double Tree Hilton Hotel for only R18 500. How much money must Luke invest at 17% per annum simple interest for 2,5 years to get this amount?(4)
/6/

Question 4

- 4.1 The Script will be performing at the Grand Arena on 4 February 2015. A Golden Ticket costs R520, inclusive of VAT. Calculate the price of the ticket before VAT is added. (2)
- 4.2 Sony is offering a Triple Pack PS4 bundle which includes three PS4 games with a standard 500GB black console for R5 170. The Hire Purchase agreement is as follows: you must pay a deposit of 10% and pay the balance off at 9% per annum simple interest over 3 years.
- 4.2.1 Calculate the deposit you need to put down. (1)
- 4.2.2 Calculate the total amount paid for the Triple Pack PS4, including interest, after the deposit has been paid. (4)
- 4.2.3 Calculate the amount of each monthly instalment. (2)
/9/

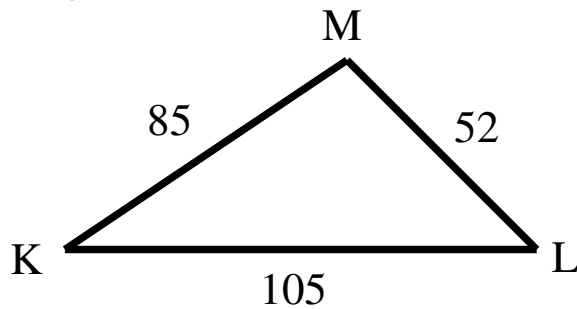
Question 5

5.1 Find the size of x in the following triangle:



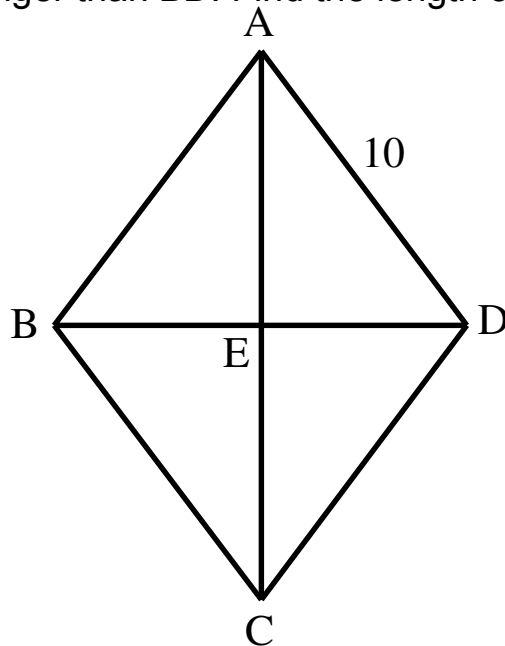
(2)

5.2 State **CLEARLY** what kind of $\triangle KLM$ is, **be specific**. Show all working.



(5)

5.3 ABCD is a rhombus. Given that $AD = 10$, $BD = 2x$ and AC is $\frac{4}{3}$ times longer than BD . Find the length of ED . Show all working.



(7)
/14/

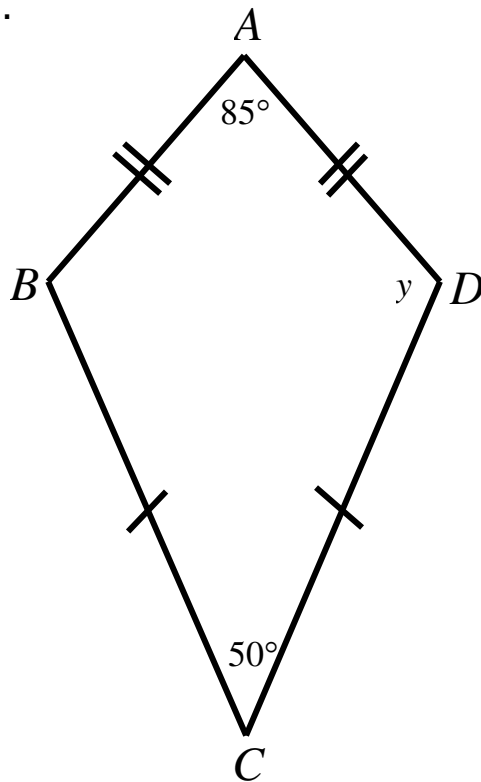
Question 6

6.1 Complete each of the following statements:

6.1.1 A quadrilateral with both pairs of opposite sides parallel and a pair of adjacent sides equal is a ... (1)

6.1.2 A quadrilateral with one pair of opposite sides parallel is a ... (1)

6.2 ABCD is a kite with $\angle A = 85^\circ$; $\angle C = 50^\circ$; $\angle D = y$; $AD = 5\text{cm}$.



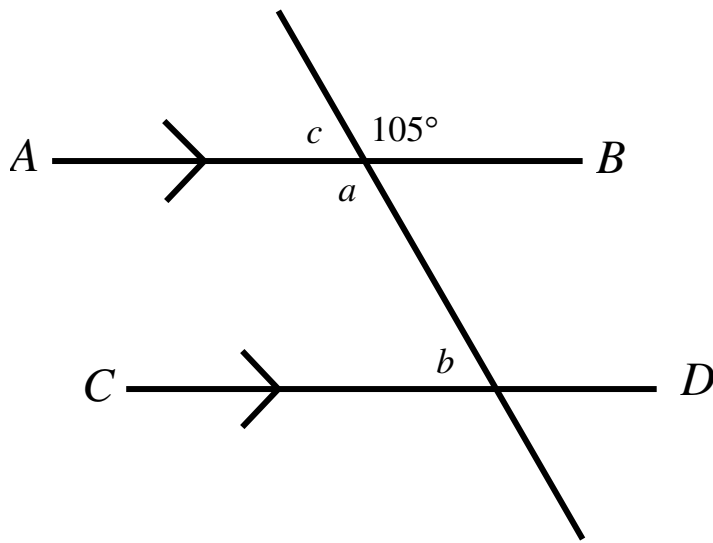
Find with **reasons**, the:

6.2.1 length of AB. (2)

6.2.2 the value of y . (5)

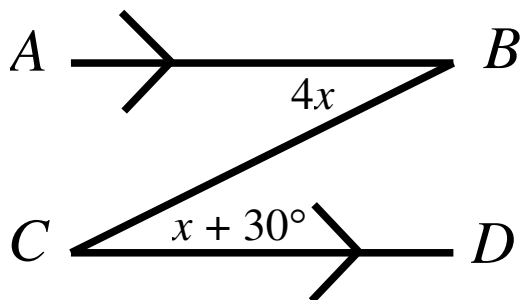
Question 7

7.1 Find with **reasons**, the value of a , b and c in **alphabetical order**.



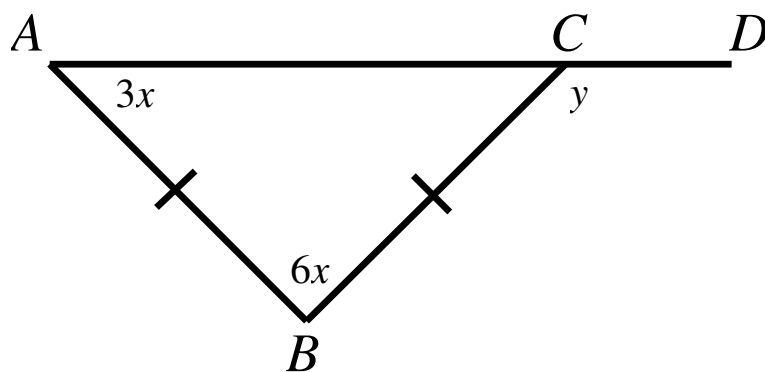
(6)

7.2 Find with **reason(s)**, the value of x .



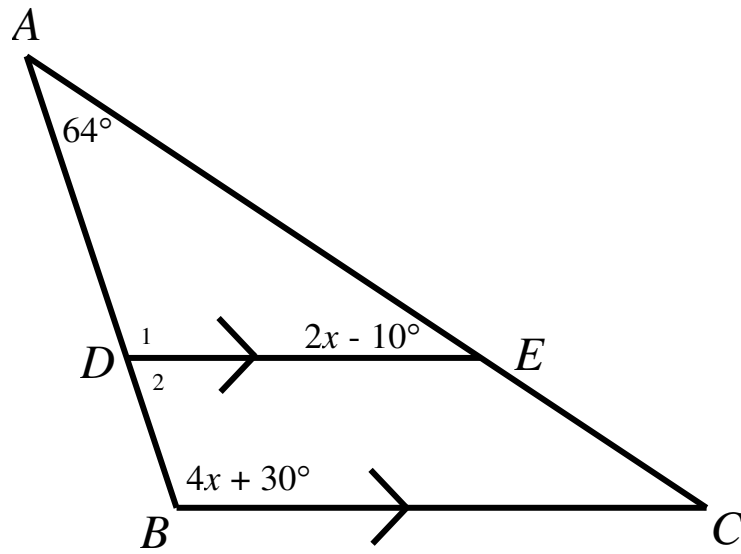
(4)

7.3 Find with **reasons**, the value of x and y .



(7)

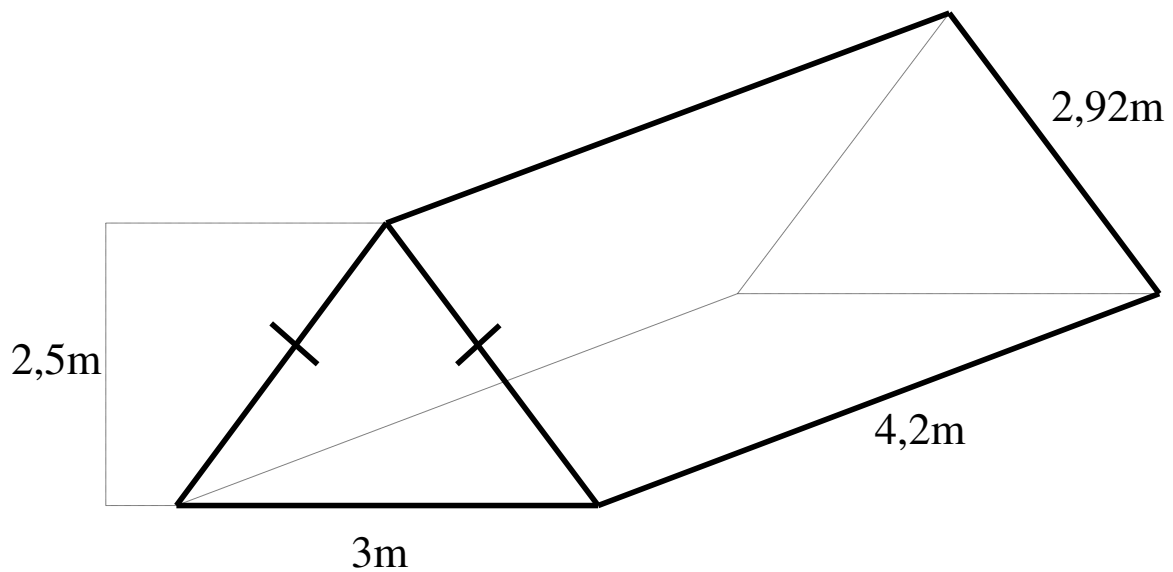
7.4 Find with **reasons**, the value of x .



(6)
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Question 8

8.1 A tent in the form of a triangular prism has an isosceles triangle as one of the faces.

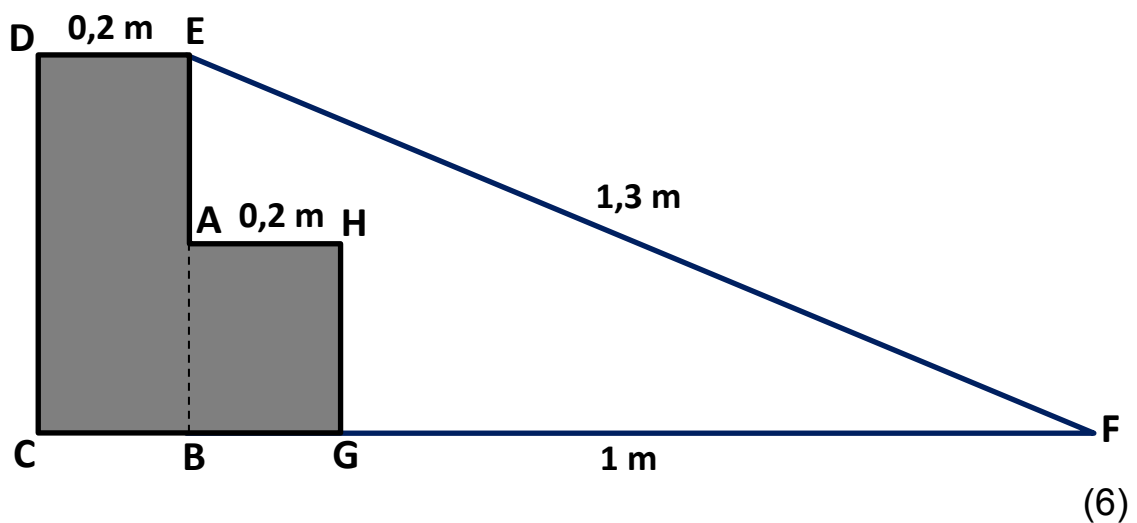


8.1.1 Calculate the total surface area of this prism. (4)

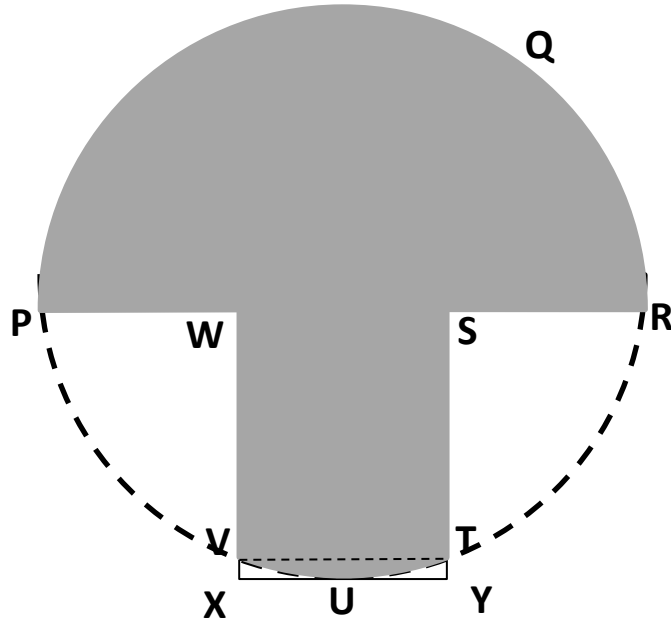
8.1.2 Calculate the volume of this prism. (3)

8.2 Wally wants to construct a ramp (EF) from the top of the staircase (E) to the ground (F) at the clock tower entrance of the school. $EF = 1,3\text{ m}$; $DE = AH = 0,2\text{ m}$; $GF = 1\text{ m}$ and $EA = HG$.

Calculate the area of the shaded part of the diagram.



- 8.3 The cross section of a screw is given. It is made up of rectangle STVW, semi-circle PQR and a segment TUV. If $PW = VT = SR = 2$ cm and it is given that the area of the non-shaded shape VXUYT is $\frac{1}{282}$ of the area of the semi-circle, calculate the area of the shaded part of the diagram.



(8)

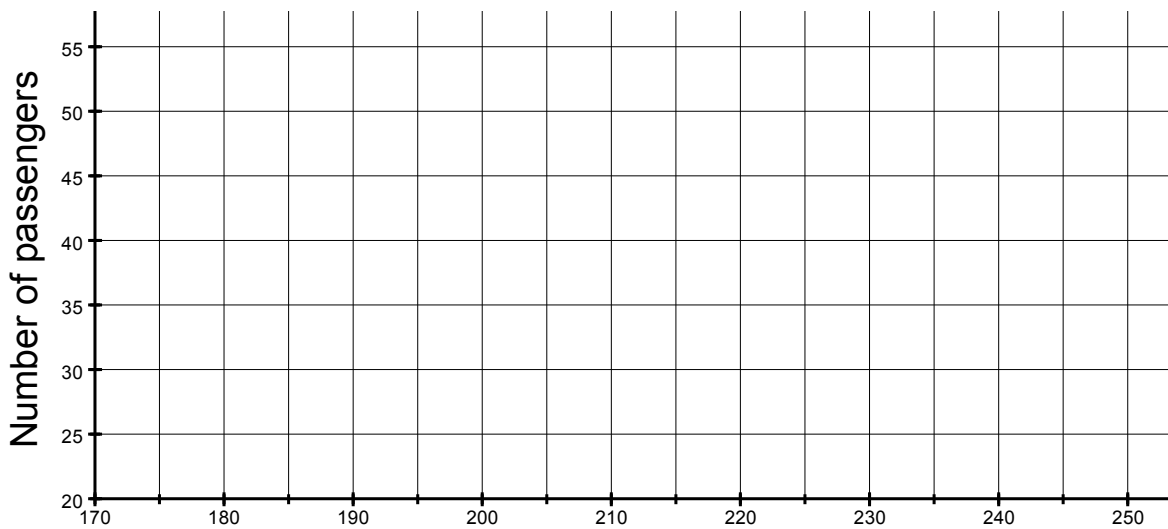
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DIAGRAMSHEET

Name: _____ Maths Teacher: _____

Question	1	2	3	4	5	6	7	8	Total
Mark	7	11	6	9	14	9	23	21	100
Actual									

Question 1



Price of ticket (Rand) (4)

1.2 On diagram (1)

1.3 _____ (2) 171