

TEACHERS WITHOUT BORDERS PROGRAMME

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basic education

Department:
Basic Education
REPUBLIC OF SOUTH AFRICA

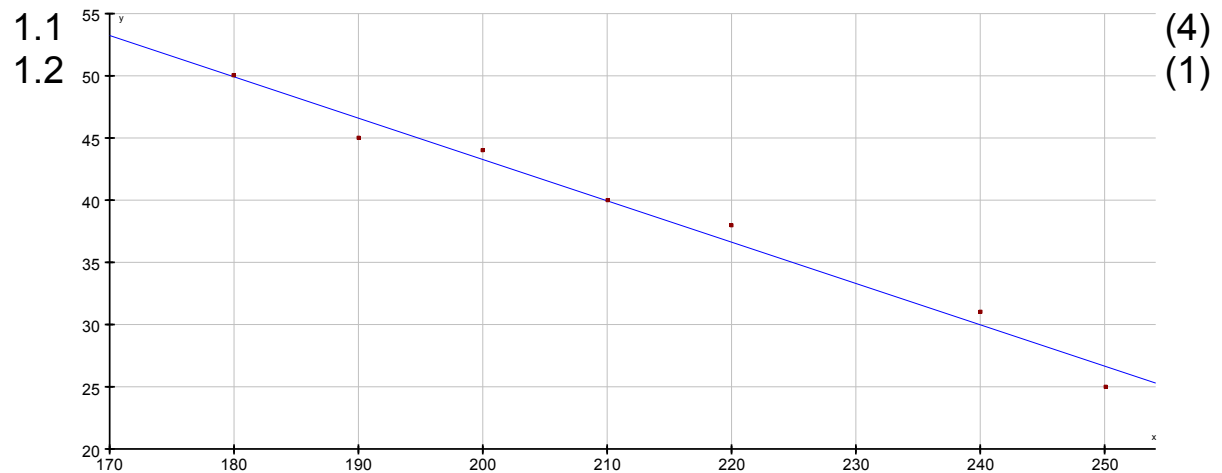
With grateful thanks to our associate partners, The [National Department of Basic Education](#), The [Independent Examinations Board](#), [Siyavula Education](#), [Smarticks](#), [Noteshare](#), [Lemonlicious](#), [datacentrix](#), and most of all, to the schools and teachers from both the public and private education sectors who as founder contributors, have lent content to the [Teachers without Borders programme](#), for the benefit of all South Africa's learners.

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

Mathematics P2 Memo

Question 1

✓✓✓✓ (plotting points, -1 per mistake)

✓ (drawing line of best fit)

1.3 ± 34 passengers ✓✓ (depended on their line of best fit) (2)
/7/

Question 2

2.1.1 $8 - 0 = 8$ ✓ (1)

2.1.2 $\bar{x} = \frac{61}{20}$ ✓✓
 $= 3,05$ ✓ (3)

2.1.3 3 ✓✓ (2)

2.1.4 1 ✓ (1)

2.1.5 Thursday ✓ (1)

2.2 $\frac{108}{360} \times 180 = 54$ ✓ (3)

/11/

Question 3

3.1 $900 \times 10,93 = R9\ 837$ ✓ (2)

3.2 $18\ 500 = P(1 + 0,17 \times 2,5)$ ✓✓ (substitution & formula)
 $\therefore P = R12\ 982,46$ ✓✓ (4)
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Question 4

4.1 $520 \div 1.14 = R456,14$ ✓ (2)

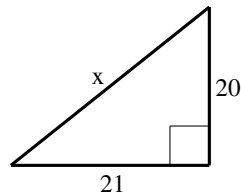
4.2.1 $5\ 170 \times 0.1 = R517$ ✓ (1)

4.2.2 $A = 4653(1 + 0.09 \times 3)$ ✓ (substitution & formula)
 $= R5\ 909,31$ ✓✓ (4)

4.2.3 $\frac{5\ 909,31}{36} = 164,15$ ✓ (rounding) (2)
/9/

Question 5

5.1 $x^2 = 20^2 + 21^2$ ✓ (Pyth)
 $\therefore x = 29$ ✓



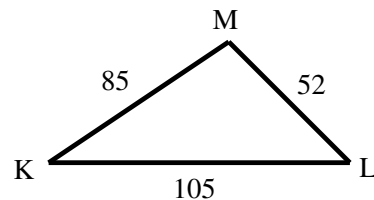
(2)

5.2 $m^2 = 105^2$
 $= 11\ 025$ ✓

$k^2 + l^2 = 52^2 + 85^2$
 $= 9\ 929$ ✓

$m^2 > k^2 + l^2$ ✓ or $11\ 025 > 9\ 929$

\therefore Obtused angled scalene triangle ✓



(5)

5.3 $AE \perp BD$ or $\angle AED = 90^\circ$ ✓

If they state $AE \perp BD$ or $\angle AED = 90^\circ$,
therefor 6; 8; 10 Pythagoras triangle...7/7

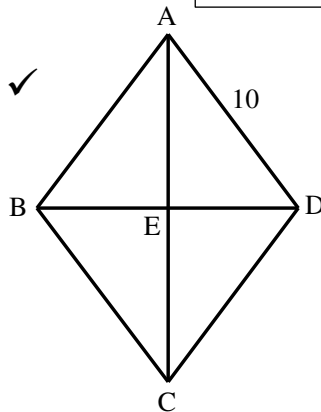
$$\left(\frac{4}{3}x\right)^2 + x^2 = 10^2 \checkmark$$

$$\therefore \frac{16}{9}x^2 + x^2 = 100 \checkmark$$

$$\therefore \frac{25}{9}x^2 = 100 \checkmark$$

$$\therefore x^2 = 36 \checkmark$$

$$\therefore x = 6 \checkmark$$



(7)

/14/

Question 6

6.1.1 rhombus ✓ (1)

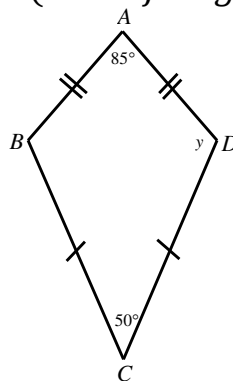
6.1.2 trapezium ✓ (1)

6.2.1 $AB = 5\text{cm}$ ✓ ($AB = AD$) ✓ (2)

6.2.2 $y + y + 85^\circ + 50^\circ = 360^\circ$ ✓ (*sum of angles in a quad*) ✓

$$\therefore 2y = 225 \checkmark$$

$$\therefore y = 112,5^\circ \checkmark$$



(5)

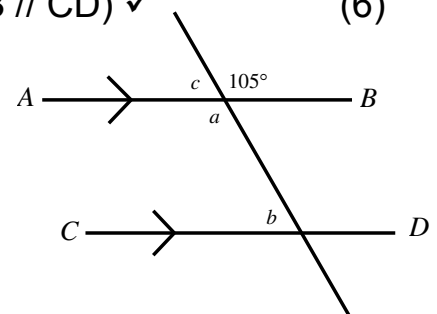
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Question 7

7.1 $a = 105^\circ$ ✓ (vertical opp \angle 's =) ✓

$b = 75^\circ$ ✓ (Co-int. angles, $AB \parallel CD$) ✓

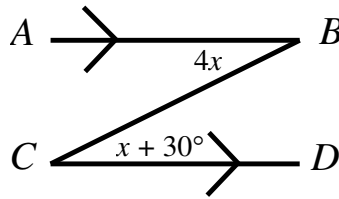
$c = 75^\circ$ ✓ (straight line / corresp. angles $AB \parallel CD$) ✓ (6)



7.2 $4x = x + 30^\circ$ ✓ (Alt. angles, $AB \parallel CD$) ✓

$\therefore 3x = 30^\circ$ ✓

$\therefore x = 10^\circ$ ✓



(4)

7.3

$3x + 3x + 6x = 180^\circ$ ✓ (\angle 's of isos. Δ) ✓✓ or $\angle ACB = 3x$ (\angle 's opp = sides) ✓

$\therefore 12x = 180^\circ$ ✓

$3x + 3x + 6x = 180^\circ$ ✓ (int \angle 's of Δ) ✓

$\therefore x = 15^\circ$ ✓

$\therefore 12x = 180^\circ$ ✓

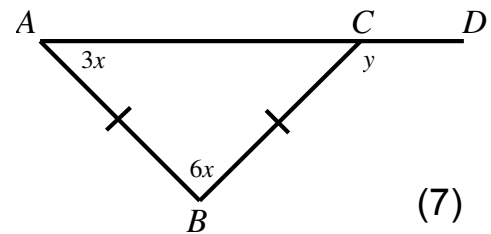
$y = 3(15^\circ) + 6(15^\circ)$ (Ext. angle) ✓

$\therefore x = 15^\circ$ ✓

$\therefore y = 135^\circ$ ✓

or $y = 180^\circ - 3(15^\circ)$ (\angle 's on straight line) ✓

$\therefore y = 135^\circ$ ✓



(7)

7.4 $\angle C = 2x - 10^\circ$ ✓ (Corresp. angles, $DE \parallel BC$) ✓

$4x + 30^\circ + 2x - 10^\circ + 64^\circ = 180^\circ$ ✓ (angles of Δ) ✓

$\therefore 6x = 96^\circ$ ✓

$\therefore x = 16^\circ$ ✓

or

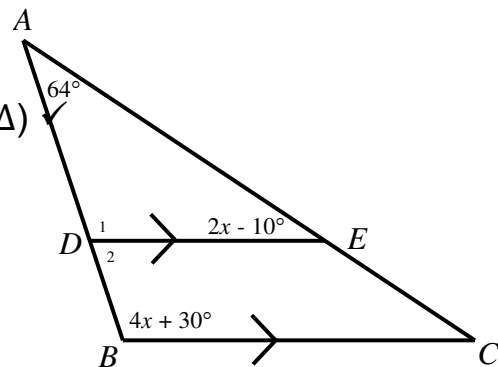
$\angle D_1 = 180^\circ - 64^\circ - (2x - 10^\circ)$ ✓ (angles of Δ) ✓

$= 126^\circ - 2x$ ✓

$4x + 30^\circ = 126^\circ - 2x$ ✓ (Corresp. angles, $DE \parallel BC$) ✓

$\therefore 6x = 96^\circ$

$\therefore x = 16^\circ$ ✓



(6)

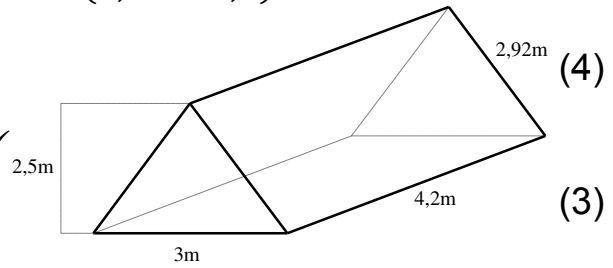
Question 8

$$8.1.1 \text{ TSA} = 2 \left(\frac{1}{2} \times 2,5 \times 3 \right) + 3 \times 4,2 + 2(2,92 \times 4,2)$$

$$= 44,63\text{m}^2 \checkmark$$

$$8.1.2 \text{ Volume} = \frac{1}{2} \times 2,5 \times 3 \times 4,2 \checkmark \checkmark$$

$$= 15,75\text{m}^3 \checkmark$$



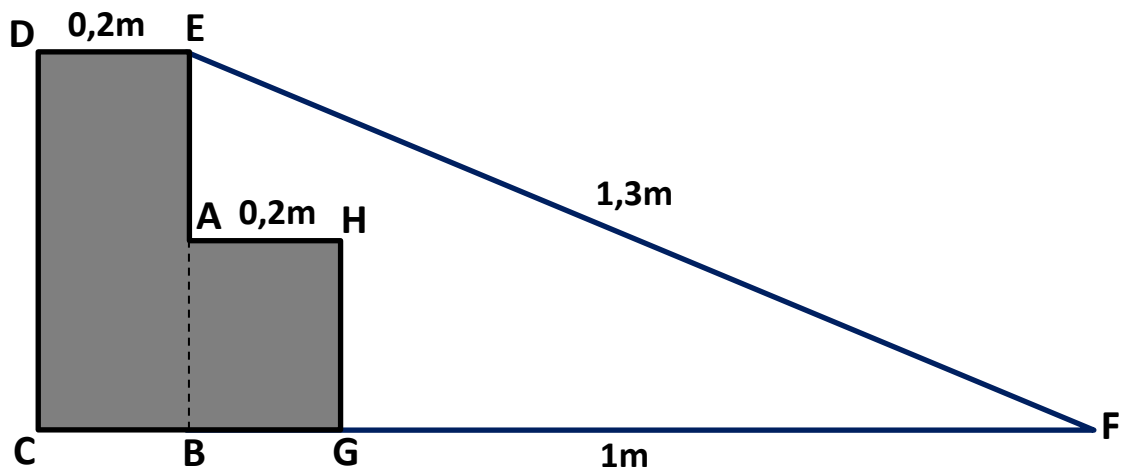
$$8.2 \quad EB^2 = 1,3^2 - 1,2^2 \checkmark$$

$$\therefore EB = 0,5 \checkmark$$

$$\text{Area} = 0,2 \times 0,5 + 0,2 \times 0,25$$

$$= 0,15\text{m}^2 \checkmark$$

(6)



$$8.3 \quad \text{Area of PQR} = \frac{\pi(3)^2}{2} \checkmark$$

$$= 14,14 \text{ cm}^2 \checkmark$$

$$\text{Area of non-shaded part VXUYT} = \frac{1}{282} \times 14,14 \checkmark$$

$$= 0,05 \text{ cm}^2 \checkmark$$

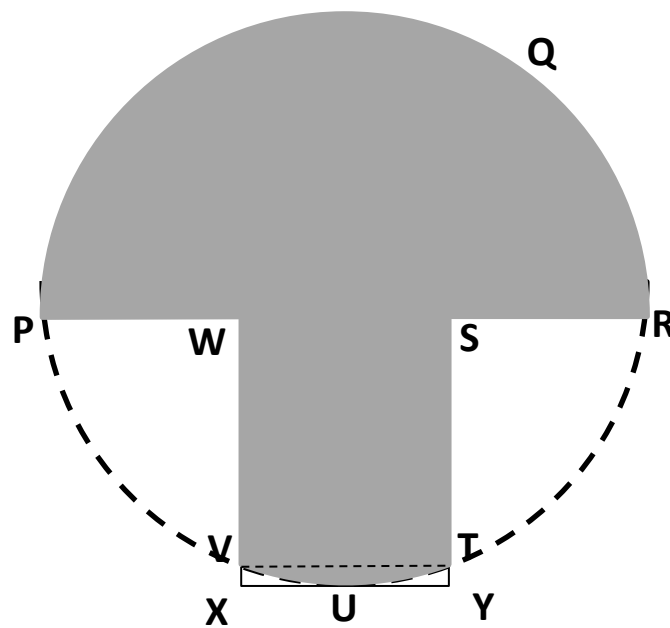
$$\text{Area of WXYS} = 2 \times 3$$

$$= 6 \text{ cm}^2 \checkmark$$

$$\text{Area of shaded part} = 14,14 + 6 - 0,05 \checkmark$$

$$= 20,09 \text{ cm}^2 \checkmark$$

(8)



/21/