

## Topic 8 Graphs 1 (Pre-TT) [33] MARKSCHEME

1.

Attempt at  $\frac{7-2}{8--2}$

M1

Or  $\frac{7-3}{8-0}$  or  $\frac{3-2}{0--2}$

(their  $\frac{1}{2}$ )  $x + c$

M1

their  $\frac{1}{2}$  must come from an attempt at a gradient

$\frac{1}{2}x + 3$

A1

[3]

2.

(a)		25	C1 For interpretation eg.. area equated to 1750m P1 Process to solve equation A1
(b)		Description	C1 Start to interpret graph eg. describe or give acceleration for one stage of the journey or state that acceleration is constant in all 3 parts C1 Describe acceleration for all stages of the journey or give acceleration for all 3 stages ( $1.25 \text{ m/s}^2$ ; $0 \text{ m/s}^2$ ; $-0.625 \text{ m/s}^2$ )

3.

Sight of  $-1\frac{1}{2}$  or  $-1.5$  or  $-3/2$

M1

accept  $-1 / (\frac{2}{3})$  or  $-1 / 0.66 \dots$  for M1 only

$y = -\frac{1}{2}x + 5$

A1

oe eg.  $2y = -3x + 10$

[2]

4.

C

B1

D

B1

B

B1

[3]

5.

(a) 4

B1

-5

B1

(b) All their 7 points correctly plotted

B1 ft

Correct smooth curve ( $\pm 2 \text{ mm}$ )

B1 ft

Straight lines score B0

Penalise feathering or double lines

(c) 4.24

B1 ft

Read off values from their graph

-0.24

B1 ft

Tolerance  $\pm \frac{1}{2}$  square (ie  $\pm 0.1$ )

If more than 2 points of intersection

accept 2 answers

Allow co-ordinates  $(x,0)$  but not  $(0, x)$

[6]

6.

(a) Attempt at  $\frac{\text{difference in } y}{\text{difference in } x}$  M1  
 eg  $\frac{900}{9000}$  or  $\frac{1000}{10000}$

$y = 0.1x + c$  A1  
 oe

$y = mx + 600$  B1  
 Or  $c = 600$   
 Or  $y = mx + 600$

(b)  $0.1 \times 16000 + 600$  M1  
 oe

2200 A1  
 ft from their part (a)

[5]

7.

Attempt to find gradient of perpendicular line M1  
 Must be negative reciprocal of their gradient for AB

(Gradient =)  $-\frac{2}{3}$  A1  
 oe eg  $-0.66, -0.67$

Use of midpoint (3, 1) M1  
 Must be used either on the diagram with an attempt at a perpendicular or in  $y = mx + c$  to find  $c$ .

$y = -\frac{2}{3}x + 3$  A1ft  
 ft their gradient if first M1 awarded  
 Accept equivalents eg  $3y + 2x = 9$

[4]

8.

a		3 to 4	C1 for a tangent drawn at $t = 6$ B1 for answer in range 3 to 4
b		452	C1 for splitting the area into 3 strips and a method of finding the area of one shape under the graph, eg $\frac{1}{2} \times 4 \times 35 (= 70)$ M1 for complete process to find the area under the graph, eg "70" + $\frac{1}{2} \times 4 \times (35 + 51) (= 172) + \frac{1}{2} \times 4 \times (51 + 54) (= 210) [= 452]$ A1 for 452