Mark scheme

Similarity

Mathematics 0580 · Questions from Paper 1, Paper 2 and Paper 4

Total marks

39

MARKS FOR EACH QUESTION

1	2	3	4	5	6	7	8	9	10	Total
2	2	3	2	4	4	3	5	6	8	**39**

Question 1 **[2]**

1	10 www	2	**M1** for $15 \div 6$ soi or **B1** for $\frac{6}{4} = \frac{15}{EF}$ oe or better

Question 2 **[2]**

2	$13 \div 5 = 2.6$ and $32.5 \div 12.5 = 2.6$ or $32.5 \div 13 = 2.5$ and $12.5 \div 5 = 2.5$ All are oe	**2**	**M1** for $13 \div 5 = 2.6$ or $32.5 \div 12.5 = 2.6$ or $32.5 \div 13 = 2.5$ or $12.5 \div 5 = 2.5$ All are oe or a correct pair of calculations without 2.6 or 2.5

Question 3 **[3]**

3	**(a)**	B and D	**1**	
	(b)	5.6	**2**	**M1** for $\frac{h}{4.2} = \frac{12.8}{9.6}$ oe or correct scale factor

Question 4 **[2]**

4	9.6 cao	2	**M1** $\frac{x}{8} = \frac{12}{10}$ oe

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Question 5 **[4]**

5	**(a)** E, G **(b)** A, B	1, 1 1, 1	

Question 6 **[4]**

6(a)	6	**2**	**M1** for $\frac{15}{12.5}$ or $\frac{12.5}{15}$ or $\frac{12.5}{5}$ or $\frac{5}{12.5}$ soi
6(b)	10	**2**	**M1** for $\frac{12.5}{15}\times 12$ or $12\div\frac{15}{12}$ soi

Question 7 **[3]**

7	9.45	**3**	**M2** for $\frac{2.7\times 7.5}{3}+2.7$ oe OR **B2** for 6.75 oe or **M1** for $\frac{3}{7.5}=\frac{2.7}{XC}$ oe If 0 scored **SC1** for answer 7.7

Question 8 **[5]**

8	16.6 or 16.64…	**5**	**M2** for $21\times\frac{18}{13.5}=[AC]$ oe or **M1** for scale factor $\frac{13.5}{18}$ or $\frac{18}{13.5}$ oe soi Then Pythagoras method: and **M2** for $\sqrt{28^2+18^2}$ [÷ 2] or $\sqrt{(theirAC)^2+18^2}$ [÷ 2] or **M1** for $AD^2=28^2+18^2$ or $AD^2=(theirAC)^2+18^2$ OR alternative trigonometry method e.g. **M1** for $\tan E=\frac{21}{13.5}$ and **M1** for $AD=\frac{18}{\cos their\ 57.3}$

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Question 9 **[6]**

9(a)	Similar	**1**	
9(b)	4	**2**	**M1** for $\frac{12}{6}=\frac{8}{BX}$ oe or better If **0** scored **SC1** for answer 3.5
9(c)(i)	6.7265 or 6.73 or 6.726 to 6.727	**2**	**M1** for scale factor 2^2 or $\left(\frac{1}{2}\right)^2$ oe soi
9(c)(ii)	13.453 or 13.5 or 13.45 to 13.46	**1**	**FT** *their* **(c)(i)** $\times 2$

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Question 10 **[8]**

10(a)	$y + \text{angle } BCD = 180$ oe AND angles on a straight line AND $x + \text{angle } BCD = 180$ oe AND opposite angles of a cyclic quadrilateral are supplementary OR angles in opposite segments are supplementary leading to $x = y$ with no errors	**B2**	**B1** for angles on a straight line OR opposite angles of a cyclic quadrilateral are supplementary OR angles in opposite segments are supplementary
10(b)	Allow any two statements from: CXD is common angle or angle AXB = angle CXD $x = y$ or angle BAX = angle DCX angle ABX = angle CDX	**M1**	
	States all three equal pairs of angles OR 2/all angles equal so triangles similar	**A1**	
10(c)(i)	6 nfww	**3**	**B2** for $BX = 18$ nfww or **M2** for $\frac{24}{12} = \frac{BC+12}{9}$ oe or **M1** for $\frac{24}{12} = \frac{BX}{9}$ oe If 0 scored, **SC1** for answer 18
10(c)(ii)	4	**1**	

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