Mark schemes

Q1.

ASA

B1

[1]

Q2.

12 : 16 or 15 : 12

or $\dfrac{12}{16}$ or 0.75

or $\dfrac{16}{12}$ or 1.33

or $\dfrac{15}{12}$ or 1.25

or $\dfrac{12}{15}$ or 0.8

oe

M1

20

From accurate working, eg 19.5 rounded to 20 is A0

A1

Additional Guidance

$\dfrac{16}{12}$ = 1.3, 1.3 × 15 = 19.5

M1, A0

1.33 × 15 = 19.995

M1, A0

1.3 × 15 = 19.5

M0, A0

[2]

Q3.

(a)   B and C

B1

(b)   SAS

Must have (a) correct

B1dep

[2]

Q4.

    (a)   neither

                                                     B1

    (b)   similar

                                                     B1

    (c)   similar

                                                     B1

    (d)   congruent

                                                     B1

[4]

Q5.

    $5^2 + 3^2 - 2 \times 5 \times 3 \times \cos 120$

                                                     M1

    49

    or

    $\sqrt{5^2 + 3^2 - 2 \times 5 \times 3 \times \cos 120}$

                                                  M1dep

    7

                                                   A1

    Angle *ACB* = angle *DCE* stated or implied
                        May be on diagram

                                                     B1

    SAS

                        oe
                        Dependent on M1 M1 A1 B1
                        Strand (i)

                                                     Q1

    Additional Guidance

    Note: Angle *ACB* = 21.7… or 21.8 or 22
    Note: Cosine rule must be seen for the complete proof
    eg *AC* = 7 without method shown followed by *ACB* = *DCE* and *SAS*

                                                     B1 only

    Calculations using sine rule or cosine rule giving answers of *AC* = 7 cm and *DE* = 3 cm
    followed by eg SSS is fully correct

                                                   5 marks

[5]

Q6.

    (180 − 70) ÷ 2 or 55

    or 180 − 70 − 70 or 40

                       oe

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		M1
70, 40		
	any order	
		A1
55, 55		
		A1
		[3]

Q7.

AAA

	B1
	[1]

Q8.

(a) 108

	B1

Corresponding
> *strand (i)*
> *Mark is dependent on scoring B1*

	Q1

(b) 180 − 117 *oe*

	M1

63

	A1
	[4]

Q9.

(a) SAS
or Side, Angle, Side
or two sides and the included angle
> *oe*

	B1

Additional Guidance
2 sides and included angle

	B1

2 sides and angle

	B0

(b) RHS
or Right angle, Hypotenuse, Side
> *oe e.g. RSH*

	B1
	[2]

Q10.

(a) 6 ÷ 3 or 2 or 9 ÷ 2

or 3 ÷ 6 or 0.5 or 9 × 0.5
or 9 ÷ 6 or 1.5 or 3 × 1.5

or $6 \div 9$ or $\dfrac{2}{3}$ or $3 \div \dfrac{2}{3}$

oe

M1

4.5

oe

A1

Additional Guidance

Accept embedded answer 4.5 × 2 = 9

M1A1

Ignore further working in attempt to round after answer 4.5
e.g. 9 ÷ 2 = 4.5 with answer 5

M1A1

'The length is double' without further working

M1A0

'The triangle is double' without further working

M1A0

(b)   53

B1

[3]

Q11.

Alternative method 1

$$\dfrac{x}{x+5} = \dfrac{6}{10}$$

oe
Setting up a correct equation

M1

10 × x = 6 × (x + 5)

oe
Eliminating fractions

M1dep

10x – 6x = 30
or 4x = 30

oe
Collecting terms

M1dep

7.5

A1

Alternative method 2

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$$\frac{x+5}{10} = \frac{5}{4}$$

or $\dfrac{x}{6} = \dfrac{5}{4}$

oe

Setting up a correct equation

M1

$4(x + 5) = 50$ or $4x + 20 = 50$

oe

Eliminating fractions

M1dep

$4x = 50 - 20$ or $4x = 30$

oe

Collecting terms

M1dep

7.5

A1

[4]

Q12.

$\dfrac{12}{8}$ or $\dfrac{8}{12}$ or $\dfrac{6}{8}$ or $\dfrac{8}{6}$ seen

oe

M1

6 × their $\dfrac{12}{8}$ or 6 ÷ their $\dfrac{8}{12}$

or 12 × their $\dfrac{6}{8}$ or 12 ÷ their $\dfrac{8}{6}$

oe

M1dep

9

A1

[3]

Q13.

180 − 85 − 32 or 63

M1

(180 − their 63) ÷ 2

M1dep

58.5 or $58\frac{1}{2}$

Accept 59 with working shown

A1

[3]