M1.

Alternative method 1

10 ÷ 4 or 2.5

or 4 ÷ 10 or 0.4

or $\frac{1}{2}$ × (18 + 10) × 25 or 350

oe

M1

18 ÷ their 2.5

or 18 × their 0.4 or 7.2

or 25 ÷ their 2.5

or 25 × their 0.4 or 10

oe

M1dep

$\frac{1}{2}$ × (18 + 10) × 25 or 350

and

$\frac{1}{2}$ × (their 7.2 + 4) × their 10 or 56

Must see working

M1dep

350 – 56 = 294

Do not award without working seen

A1

Alternative method 2

10 ÷ 4 or 2.5

or 4 ÷ 10 or 0.4

or $\frac{1}{2}$ × (18 + 10) × 25 or 350

oe

M1

(Area scale factor =) (their 2.5)²
or (their 0.4)²

M1dep

their 350 ÷ (their 2.5)²
or their 350 × (their 0.4)² or 56

Must see working

M1dep

350 – 56 = 294

Do not award without working seen

A1

[4]

M2.

(a) **Alternative method 1**

10 ÷ 4 or 2.5

or 4 ÷ 10 or 0.4

or $\frac{1}{2}$ × (18 + 10) × 25 or 350

oe

M1

18 ÷ their 2.5
or 18 × their 0.4 or 7.2
or 25 ÷ their 2.5
or 25 × their 0.4 or 10

oe

M1dep

$\frac{1}{2}$ × (18 + 10) × 25 or 350

and

$\frac{1}{2}$ × (their 7.2 + 4) × their 10 or 56

Must see working

M1dep

350 – 56 = 294

Do not award without working seen

A1

Alternative method 2

10 ÷ 4 or 2.5

or 4 ÷ 10 or 0.4

or $\frac{1}{2}$ × (18 + 10) × 25 or 350

oe

M1

(Area scale factor =) (their 2.5)²
or (their 0.4)²

M1dep

their 350 ÷ (their 2.5)²
or their 350 × (their 0.4)² or 56

Must see working

M1dep

350 – 56 = 294

Do not award without working seen

A1

(b) $\frac{18 - 10}{2}$ or 4

B1

$\tan x = \frac{25}{\text{their } 4}$

M1

[80.9, 81]

A1

[7]

M3.

$\frac{12}{3}$ or 4

or $\frac{3}{12}$ or $\frac{1}{4}$

oe

B1

$\frac{2x-3}{5x} = \frac{3}{12}$

oe

M1

$12(2x - 3) = 3 \times 5x$

or $24x - 36 = 15x$

or $9x = 36$

or $4(2x - 3) = 5x$

or $8x - 12 = 5x$

or $3x = 12$

oe

M1

$x = 4$

A1

$(5 \times \text{their } 4)^2 - 12^2$ or 256

½ × 4 × 3 or 6

M1

$\sqrt{(5 \times \text{their } 4)^2 - 12^2}$ or 16

½ × 16 × 12 or 6 × 4²

M1

96

A1

[7]

M4.

(a) $\frac{2}{5}$

B1

Alternative method 1

(b) $7 \div \frac{2}{5}$

or $7 \times \frac{5}{2}$ or 17.5

or $\frac{6}{5}$

or $\frac{5}{6}$

oe

$\frac{?}{6w} = \frac{7}{5w}$

M1

their $17.5 \times \frac{6}{5}$

or 21

oe

$7 \times \frac{6w}{5w}$

M1

$21 \times \frac{2}{5}$

or $7 \times \frac{6}{5}$

or 8.4

or 10 + 17.5 + 21 or 48.5

oe

M1dep

19.4

A1

Alternative method 2

$5w \times \frac{2}{5} = 7$ or $\frac{5w}{10} = \frac{7}{4}$ or $\frac{5w}{7} = \frac{10}{4}$

oe

M1

$(w =) \frac{7}{5} \times \frac{5}{2}$ or 3.5

oe

M1

(Perimeter of *A* =) 10 + 17.5 + 21

or 48.5

or (Third side of *B* =)

$6 \times 3.5 \times \frac{2}{5}$

or 8.4

oe

M1

19.4

A1

[5]

M5.

(a) $1.\dot{6}$ or 1.66 or 1.67 or $1\frac{2}{3}$ or $\frac{15}{9}$ or $\frac{5}{3}$

Allow any indication of recurrence, eg 1.6^{r}
$1.\overline{66}$, but not 1.6…,

Allow equivalent answers eg $1\frac{6}{9}$

***NB** 1.6 is B0*
*Ignore any incorrect rounding **after** a correct answer seen, eg answer of 1.7 after 1.666… seen*

Do not accept ratio, eg 3 : 5 or 5 : 3 but 1 : $\frac{5}{3}$ is OK as one of the acceptable answers can be seen.

B1

(b) 54

B1

(c) 18

***NB** 18 is 1 mark even if scale factor wrong in (a)*
ft 30 ÷ their (a) if correct and given to at least 2dp. Ignore incorrect rounding after correct answer seen, eg 18.8 after 18.75 seen with 1.6 in (a)

B1ft

[3]

M6.

CN = 5 or *CB* = 10

Check diagram

M1

(*AC* =) 30 − 13 − 5 − 5 (= 7)

15 − (11.5)

A1

3.5

A1

[3]

M7.(a) 2.5 or $\frac{5}{2}$

oe accept 1 : 2.5 or 2 : 5
Incorrect cancelling of 15 / 6 is B0.

B1

(b) 60

B1

(c) 20 ÷ their 2.5, $\frac{6 \times 20}{15}$

oe eg AB × their 2.5 = 20
ft from their (a)

M1

8

Accuracy to 1 dp or better

A1ft

[4]