

Trig 6 Answers

Area of a triangle - Answers (p.26-27)

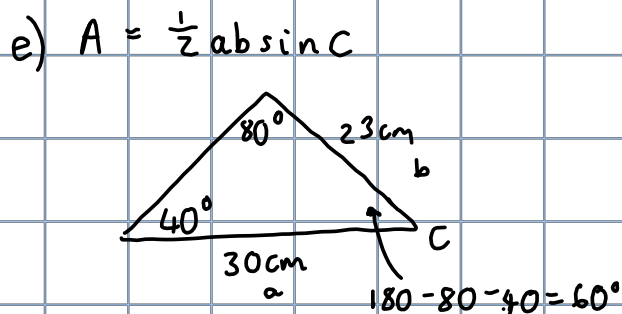
$$A = \frac{1}{2} ab \sin C$$

1 a) $A = \frac{1}{2} ab \sin C$
 $= \frac{1}{2} \times 5 \times 8 \times \sin 75$
 $= 19.3 \text{ cm}^2$

b) $A = \frac{1}{2} ab \sin C$
 $= \frac{1}{2} \times 10 \times 15 \times \sin 125$
 $= 61.4 \text{ m}^2$

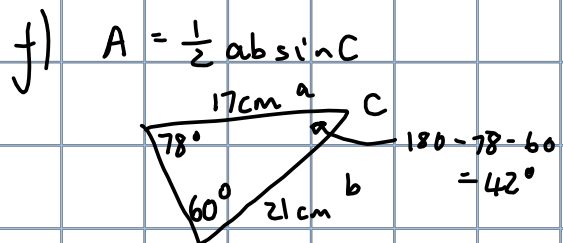
c) $A = \frac{1}{2} ab \sin C$
 $= \frac{1}{2} \times 6.8 \times 7 \times \sin 97$
 $= 23.6 \text{ mm}^2$

d) $A = \frac{1}{2} ab \sin C$
 $= \frac{1}{2} \times 3.9 \times 2.5 \times \sin 34$
 $= 2.7 \text{ cm}^2$



$$A = \frac{1}{2} \times 30 \times 23 \times \sin 60$$

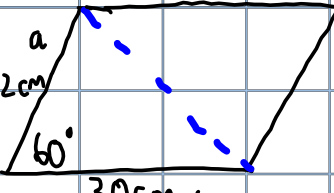
$$= 298.8 \text{ cm}^2$$



$$A = \frac{1}{2} \times 17 \times 21 \times \sin 42$$

$$= 119.4 \text{ cm}^2$$

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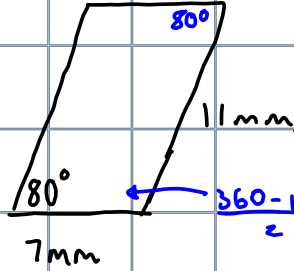
2a) 

no half as we need double the area of the triangle.

$$A = 12 \times 30 \times \sin 60$$

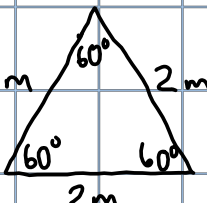
$$= \underline{\underline{311.8 \text{ cm}^2}}$$

$A = \frac{1}{2} ab \sin C$

b) 

$$A = 7 \times 11 \times \sin 100$$

$$= \underline{\underline{75.8 \text{ mm}^2}}$$

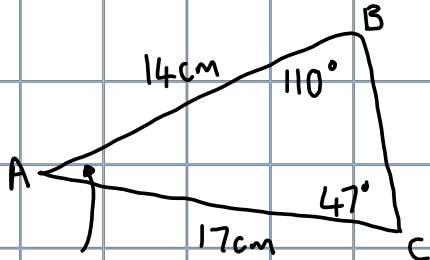
4. 

$$A = \frac{1}{2} ab \sin C$$

$$= \frac{1}{2} \times 2 \times 2 \times \sin 60$$

$$= 1.7 \text{ m}^2$$

He will need to remove 1.7 m^2 .

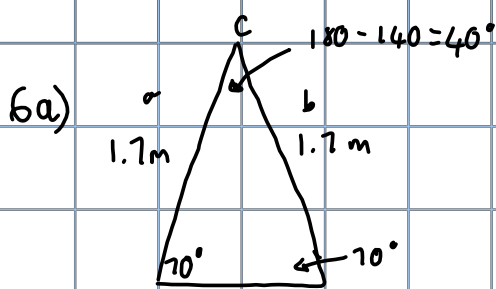
5. 

$$A = \frac{1}{2} \times 14 \times 17 \times \sin 23$$

$$= \underline{\underline{46.5}}$$

$180 - 110 - 47 = 23^\circ$

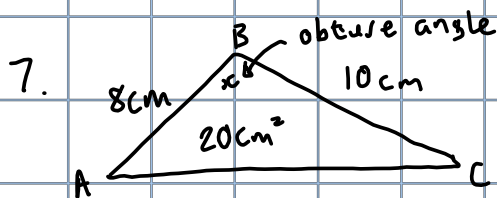
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$$A_{\Delta} = \frac{1}{2} ab \sin C$$

$$\begin{aligned} A &= \frac{1}{2} ab \sin C \\ &= \frac{1}{2} \times 1.7 \times 1.7 \times \sin 40 \\ &= 0.9 \text{ m}^2 \end{aligned}$$

b) Total area = $14 \times 0.9 = 12.6 \text{ m}^2$ required



$$A = \frac{1}{2} ab \sin C$$

$$20 = \frac{1}{2} \times 10 \times 8 \times \sin x$$

$$\sin x = \frac{20}{40} = \frac{1}{2}$$

$$x = \sin^{-1}\left(\frac{1}{2}\right) = \underline{\underline{30^\circ}}$$

8. $A = \frac{1}{2} ab \sin C$ (non-calculator qn.)

$$= \frac{1}{2} \times 14 \times 10 \times \sin 150$$

$$= \frac{1}{2} \times 14 \times 10 \times \frac{1}{2}$$

$$= 35 \text{ m}^2$$

9. $A = \frac{1}{2} ab \sin C$

$$429.5 = \frac{1}{2} \times 34 \times 34 \times \sin B$$

$$\sin B = \frac{429.5}{578}$$

$$B = 48^\circ$$

The obtuse angle is 48° .