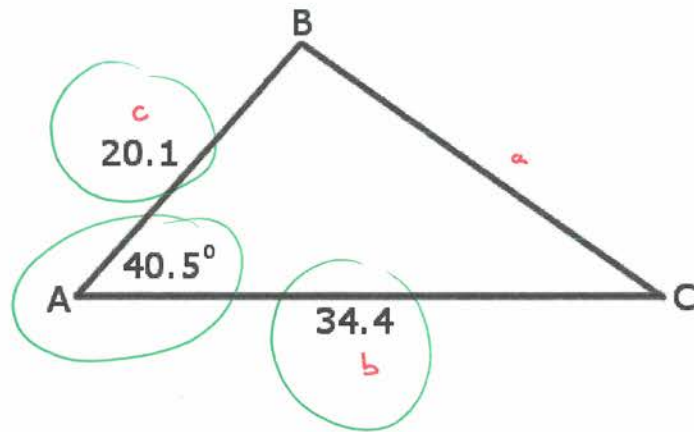


1. Determine the area of the triangle below.  
Round your answer to the nearest tenth of a unit.



$$A_{\Delta} = \frac{b \cdot c \cdot \sin A}{2}$$

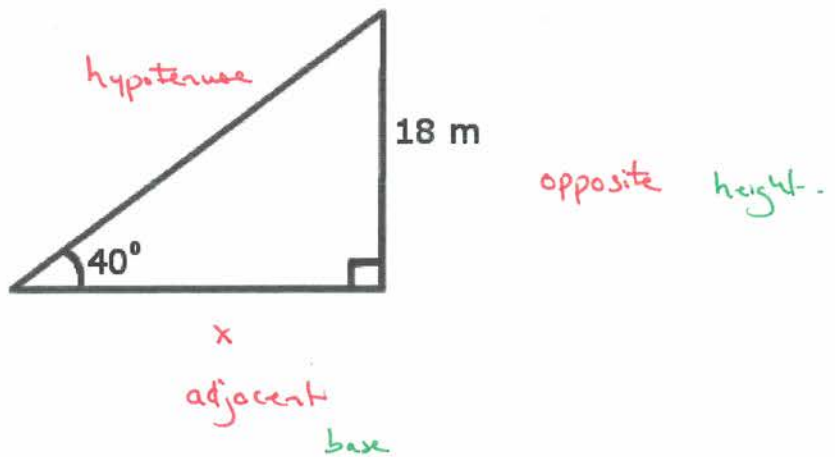
$$= \frac{(34.4)(20.1) \cdot \sin 40.5}{2}$$

$$= 224.527$$

$$A_{\Delta} = 224.5$$

ANSWER:

2. Determine the area of the triangle below.  
Round your answer to the nearest integer.



STEP 1

SOH - CAH - TOA

Have: opposite  
Want: adjacent.

$$\frac{\tan \angle}{1} = \frac{\text{OPP}}{\text{adj}}$$

$$\frac{\tan 40^\circ}{1} = \frac{18}{x}$$

$$x = \frac{(18)(1)}{\tan 40}$$

$$x = 21.45156$$

STEP 2

$$A_d = \frac{\text{base} \cdot \text{height}}{2}$$

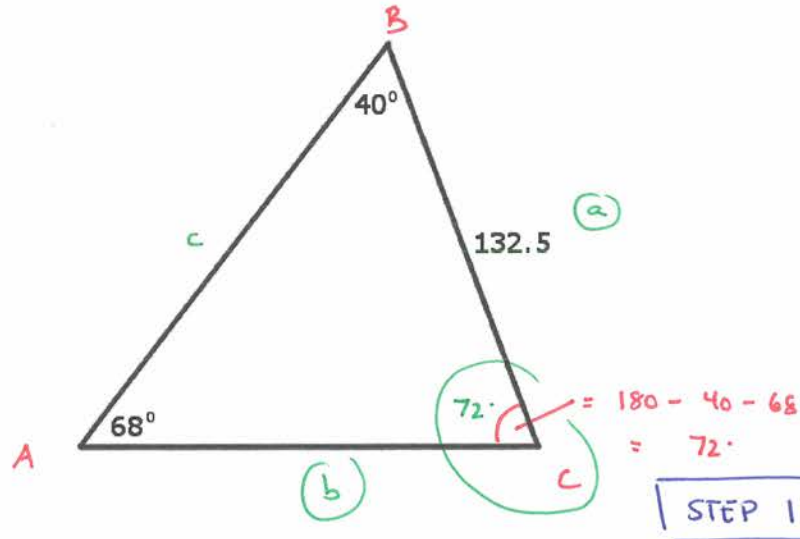
$$= \frac{(21.45156)(18)}{2}$$

$$= 193.064$$

$$A_d \approx 193$$

ANSWER:

3. What is the area of the triangle below?  
Round your answer to the nearest integer.



STEP 2

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{132.5}{\sin 68} = \frac{b}{\sin 40} = \frac{c}{\sin 72}$$

$$b = \frac{(132.5)(\sin 40)}{\sin 68}$$

$$b = 91.85811$$

STEP 1

STEP 3

$$A_d = \frac{a \cdot b \cdot \sin C}{2}$$

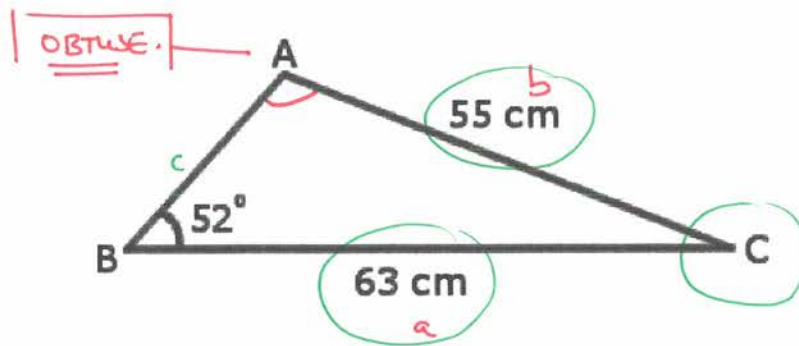
$$= \frac{(132.5)(91.85811) \cdot \sin 72}{2}$$

$$= 5787.749$$

$$A_d \approx 5788$$

ANSWER :

4. Determine the area of the triangle below.  
Round your answer to the nearest integer.



STEP 1

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

$$\frac{63}{\sin A} = \frac{55}{\sin 52} = \frac{c}{\cancel{\sin C}}$$

$$\sin A = \frac{(63)(\sin 52)}{55}$$

$$\cancel{\sin} A = \sin^{-1} 0.90263$$

$$A = 64.50601$$

STEP 2

$$\text{Obtuse} = 180 - \text{acute}$$

$$A = 180 - 64.50601$$

$$A = 115.49398^\circ$$

STEP 3

$$\angle C = 180 - \angle A - \angle B$$

$$= 180 - 115.49398 - 52$$

$$\angle C = 12.506$$

STEP 4

$$A_{\Delta} = \frac{a \cdot b \cdot \sin C}{2}$$

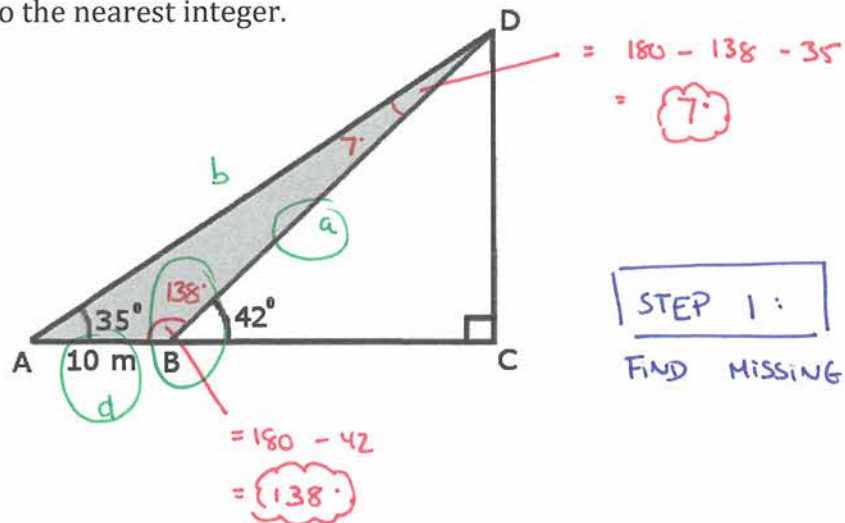
$$= \frac{(63)(55) \cdot \sin 12.506}{2}$$

$$= 375.159$$

$$A_{\Delta} \approx 375$$

ANSWER:

5. Determine the area of triangle ABD.  
Round your answer to the nearest integer.



STEP 1:  
FIND MISSING ANGLES

STEP 2

$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{d}{\sin D}$$

$$\frac{a}{\sin 35} = \frac{10}{\sin 7} = \frac{d}{\sin 138}$$

$$a = \frac{(10)(\sin 35)}{\sin 7}$$

$a = 47.065$

STEP 3

$$A_d = \frac{a \cdot d \cdot \sin B}{2}$$

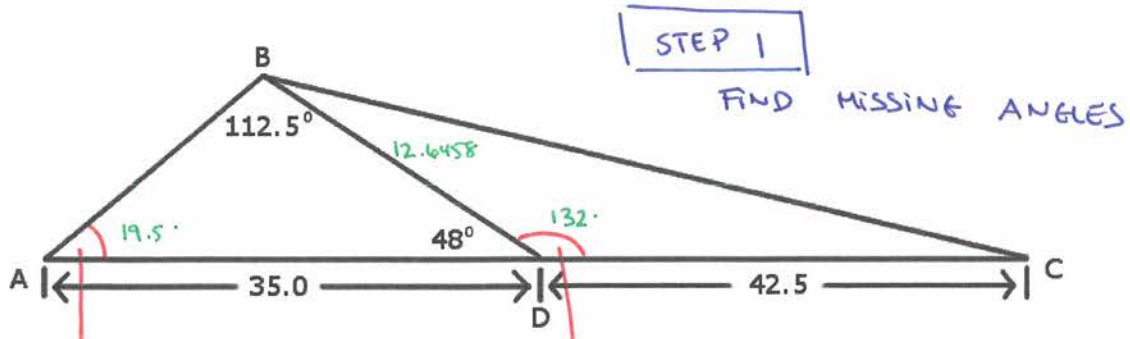
$$= \frac{(47.065)(10) \cdot \sin 138}{2}$$

$$= 157.463$$

$A_d \approx 157$

ANSWER:

6. What is the area of triangle ABC below?  
Round your answer to the nearest integer.



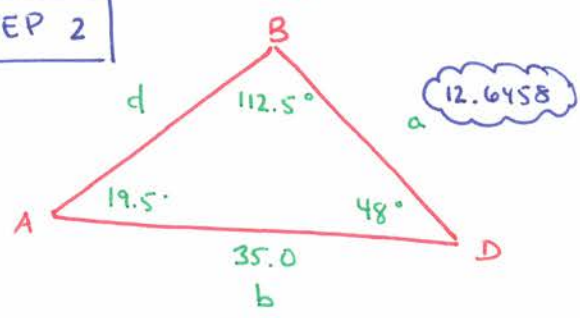
$$= 180 - 48 - 112.5$$

$$= 19.5$$

$$= 180 - 48$$

$$= 132$$

STEP 2



$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{d}{\sin D}$$

$$\frac{a}{\sin 19.5} = \frac{35.0}{\sin 112.5} = \frac{d}{\sin 48}$$

$$a = \frac{(35.0)(\sin 19.5)}{\sin 112.5}$$

$$a = 12.6458$$

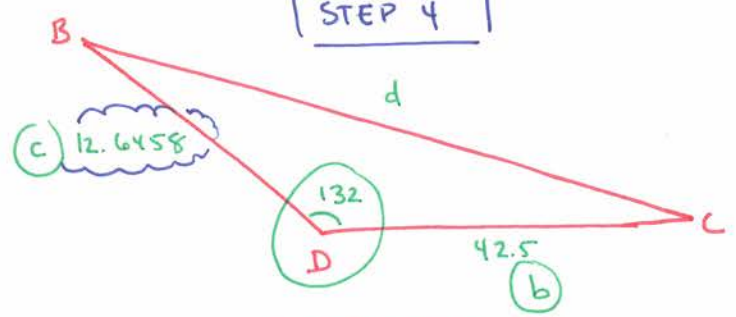
STEP 3

$$A_D = \frac{a \cdot b \cdot \sin D}{2}$$

$$= \frac{(12.6458)(35.0) \cdot \sin 48}{2}$$

$$A_D = 164.4597$$

STEP 4



$$A_D = \frac{b \cdot c \cdot \sin D}{2}$$

$$= \frac{(42.5)(12.6458) \cdot \sin 132}{2}$$

$$A_D = 199.7003$$

STEP 5

$$A_{TOT} = 164.4597 + 199.7003$$

$$A_{TOT} = 364.160$$

$$A_{TOT} \approx 364$$

ANSWER: