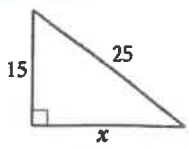


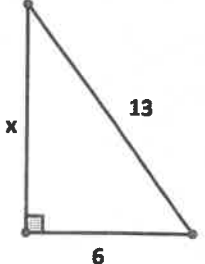
1.  $x = 20$



$$15^2 + x^2 = 25^2$$

$$\sqrt{x^2} = \sqrt{25^2 - 15^2}$$

4. Find x

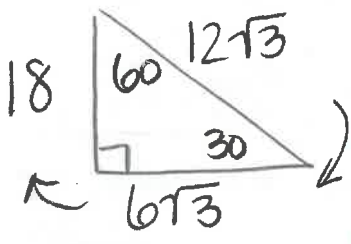


$$x^2 + 6^2 = 13^2$$

$$\sqrt{x^2} = \sqrt{13^2 - 6^2}$$

$x = \sqrt{133} = 11.53$

7. What are the lengths of the 2 legs of a 30-60-90 triangle if the length of the hypotenuse is  $12\sqrt{3}$ ?



$$6\sqrt{3} \cdot \sqrt{3}$$

$$6 \cdot 3 = 18$$

$6\sqrt{3}$   
 $18$

10. Solve for the missing sides

a)

$\div \sqrt{3}$

$x = 6$   
 $y = 12$

b)

$x = 10\sqrt{3}$   
 $y = 20$

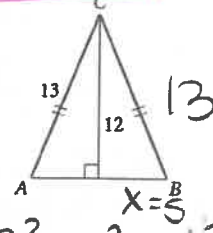
c)

$x = 7$   
 $y = 7\sqrt{2}$

d)

$x = 12\sqrt{2}$   
 $y = 6\sqrt{6}$

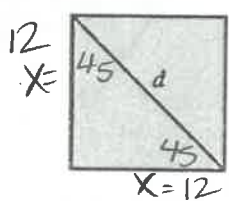
2.  $AB = 10$



$$12^2 + x^2 = 13^2$$

$$\sqrt{x^2} = \sqrt{13^2 - 12^2}$$

The area of this square is  $144 \text{ cm}^2$ . Find d.



$d = 12\sqrt{2}$

$$x^2 = 144$$

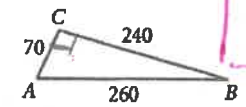
$x = 12$

8. Find the side length of an equilateral triangle with an area of  $3\sqrt{36}$

$18$

3.

Is  $\triangle ABC$  an acute, obtuse, or right triangle?



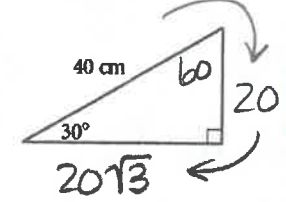
OBTUSE  $\triangle$

$$70^2 + 240^2 \square 260^2$$

$$62500 \text{ (L) } 67600$$

6.

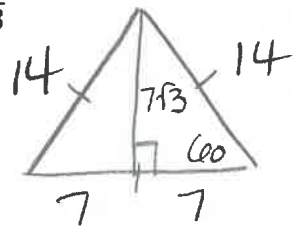
What is the area of the triangle?



$200\sqrt{3} \text{ cm}$   
 $\approx 346.41 \text{ cm}$

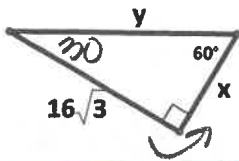
$$\frac{b \cdot h}{2} = \frac{20\sqrt{3} \cdot 20}{2}$$

9. Find the perimeter of an equilateral triangle with a height of  $7\sqrt{3}$



$14(3) = 42 \text{ units}$

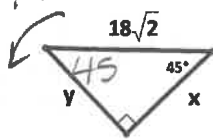
e)



$$x = \frac{16}{\sin 60^\circ}$$

$$y = \frac{16\sqrt{3}}{\cos 60^\circ}$$

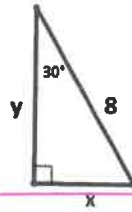
f)  $\div \sqrt{2}$



$$x = \frac{18\sqrt{2}}{\sin 45^\circ}$$

$$y = \frac{18\sqrt{2}}{\cos 45^\circ}$$

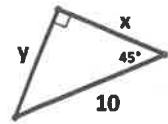
g)



$$x = \frac{8}{\cos 30^\circ}$$

$$y = \frac{8 \sin 30^\circ}{\cos 30^\circ}$$

h)

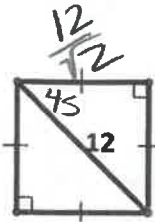


$$x = \frac{10}{\sin 45^\circ}$$

$$y = \frac{10}{\cos 45^\circ}$$

5. Determine the area of the following.

a)

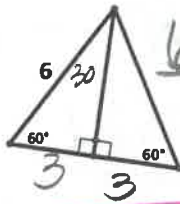


$$\text{Area} = 12 \cdot 12 = 144$$

b)

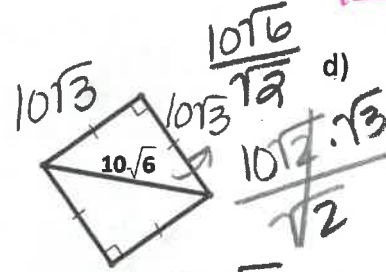
$$\frac{144}{2}$$

$$\frac{12 \cdot 12}{2}$$



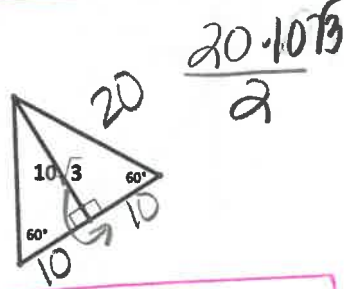
$$\text{Area} = \frac{6 \cdot 3\sqrt{3}}{2}$$

c)



$$\text{Area} = 10\sqrt{3} \cdot 10\sqrt{3}$$

d)

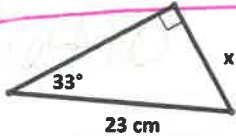


$$\text{Area} = \frac{20 \cdot 10\sqrt{3}}{2}$$

6. Solve for the missing information. (Round all final answers to 2 decimals places)

a)

$$x = 12.53$$

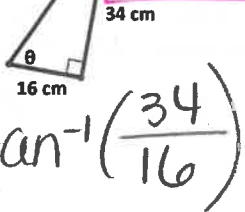


$$\sin 33^\circ = \frac{x}{23}$$

$$x = 23 \cdot \sin 33^\circ$$

b)

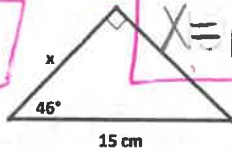
$$64.80^\circ$$



$$\tan^{-1}\left(\frac{34}{16}\right)$$

c)

$$x = 10.42$$



$$\cos 46^\circ = \frac{x}{15}$$

$$x = 15 \cdot \cos 46^\circ$$

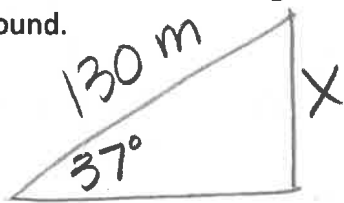
d)



$$\tan^{-1}\left(\frac{15}{11}\right)$$

$$53.75^\circ$$

7. Sharon is flying a kite on a string 130 m long. Determine the height of the kite if the string is at an angle of  $37^\circ$  to the ground.

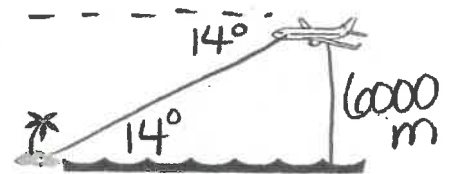


$$\sin 37^\circ = \frac{x}{130}$$

$$x = 130 \cdot \sin 37^\circ$$

$$78.24 \text{ m}$$

8. An airplane is flying at an altitude of 6000 m over the ocean directly toward an island. When the angle of depression of the coastline from the airplane is  $14^\circ$ , how much farther does the airplane have to fly before it crosses the coast?



$$\tan 14^\circ = \frac{6000}{x}$$

$$x \cdot \tan 14^\circ = 6000$$

$$\frac{x \cdot \tan 14^\circ}{\tan 14^\circ} = \frac{6000}{\tan 14^\circ}$$

$$x = 24064.69 \text{ m}$$