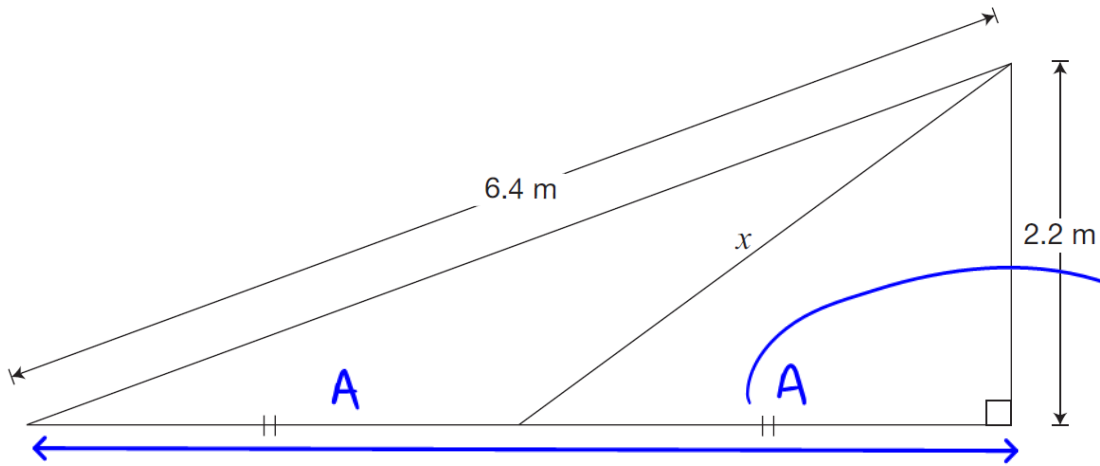


29 All the Right Stuff

The diagram below shows a small right triangle inside a large right triangle.



Determine the value of x .
Show your work.

$$y^2 + 2.2^2 = 6.4^2$$

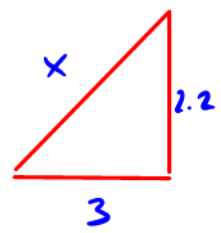
$$y^2 = 6.4^2 - 2.2^2$$

$$y = \sqrt{6.4^2 - 2.2^2}$$

$$y = \sqrt{36.12}$$

$$y = 6m$$

"||" means identical lines
 $A = 6 \div 2$
 $A = 3m$



$$x^2 = 2.2^2 + 3^2$$

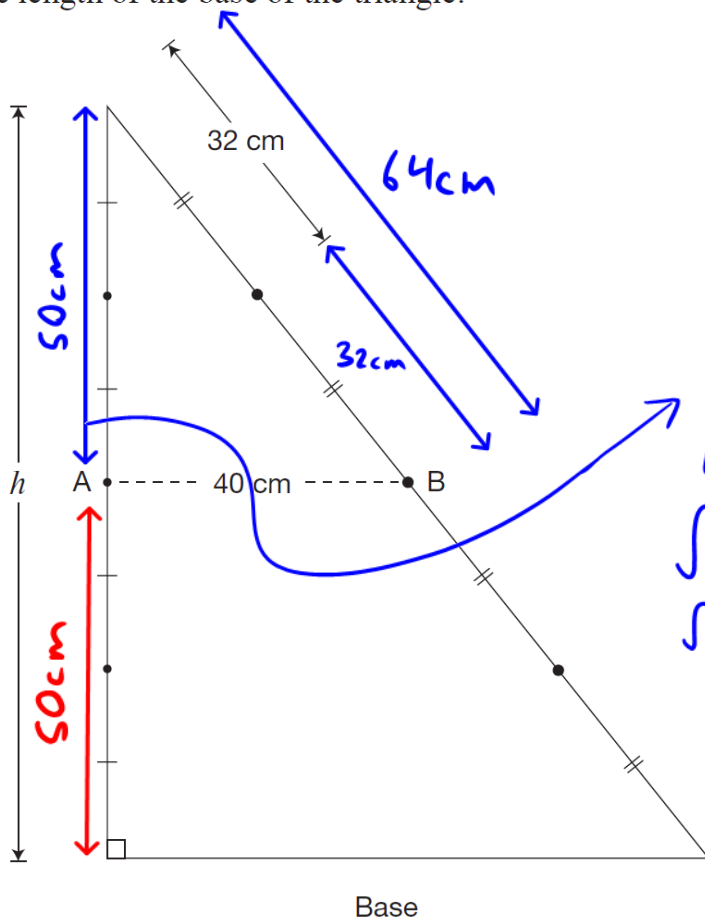
$$x = \sqrt{2.2^2 + 3^2}$$

$$x = \sqrt{13.84}$$

$x = 3.72m$

30 Tricky Triangle

Line segment AB joins the midpoints of two sides of the triangle below. The length of AB is half the length of the base of the triangle.



$$\begin{aligned}
 c^2 &= a^2 + b^2 \\
 64^2 &= a^2 + 40^2 \\
 64^2 - 40^2 &= a^2 \\
 \sqrt{64^2 - 40^2} &= a \\
 \sqrt{2496} &= a \\
 49.96 &= a \\
 a &= 50\text{ cm}
 \end{aligned}$$

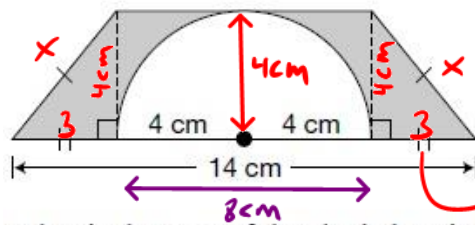
Determine the value of h in the diagram.

Show your work.

$$50 + 50 = 100\text{ cm}$$

32 Something's Missing

The semicircle in the diagram below has a radius of 4 cm.



What is the area of the shaded region?

Show your work.

$$A = 2 \triangle + \square - \text{semicircle}$$

$$A = 2 \left(\frac{b \cdot h}{2} \right) + l \cdot w - \frac{\pi r^2}{2}$$

$$A = 3(4) + (8)(4) - \frac{\pi(4)^2}{2}$$

$$A = 12 + 32 - \frac{16\pi}{2}$$

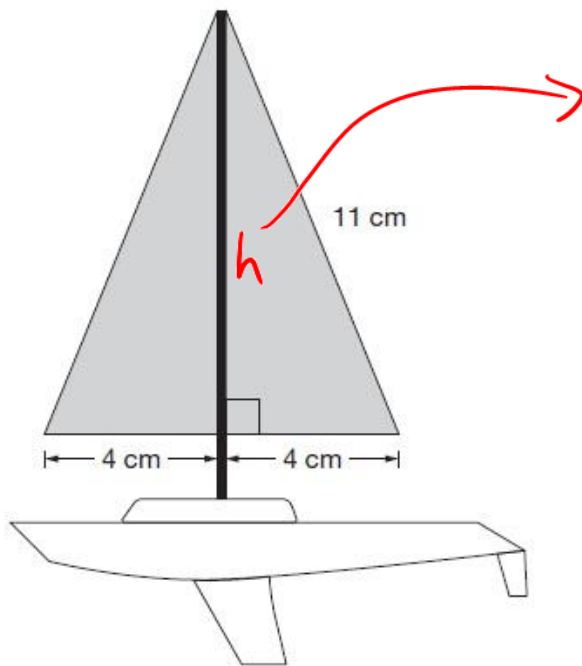
$$A = 12 + 32 - 8\pi$$

$$A = 44 - 25.12$$

$$A = 18.88 \text{ cm}^2$$

33 Toy Sailboats

Emelina makes toy sailboats as shown below.



$$11^2 = 4^2 + h^2$$

$$11^2 - 4^2 = h^2$$

$$121 - 16 = h^2$$

$$\sqrt{105} = h$$

$$10.25 \text{ cm} = h$$

Determine the total area of the shaded sails.

Show your work.

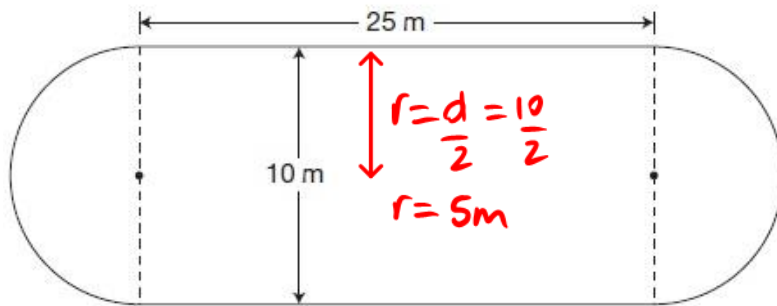
$$\text{Area} = \frac{b \cdot h}{2}$$

$$= \frac{(8)(10.25)}{2}$$

$$\boxed{A = 41 \text{ cm}^2}$$

34 Building an Ice Rink

Jake builds an ice rink as shown below.



Determine the perimeter of the rink.

Show your work.

$$P = 2l + 2\pi r \quad \leftarrow \text{2 semicircles make one circle}$$

$$P = 2(25) + 2\pi(5)$$

$$P = 50 + 10\pi$$

$$P = 81.5 \text{ m}$$