

* solutions may vary

$$C = 180 - 90 - 56$$

$$\boxed{C = 34^\circ}$$

$$\sin 56^\circ = \frac{8.6}{b}$$

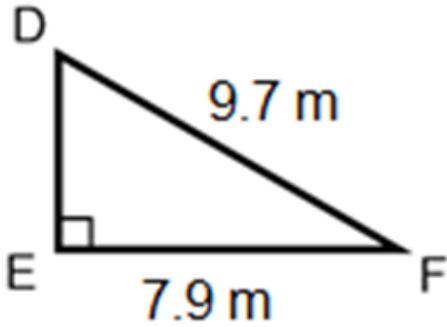
$$b = \frac{8.6}{\sin 56^\circ}$$

$$\boxed{b = 10.4 \text{ m}}$$

$$\tan 34^\circ = \frac{c}{8.6}$$

$$c = 8.6 \times \tan 34^\circ$$

$$\boxed{c = 5.8 \text{ m}}$$



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$$\cos F = \frac{7.9}{9.7}$$

$$\cos F = 0.8144$$

$$F = \cos^{-1}(0.8144)$$

$$F = 35.47^\circ$$

$$F = 35.5^\circ$$

$$\sin D = \frac{7.9}{9.7}$$

$$D = 54.5^\circ$$

$$f^2 = 9.7^2 - 7.9^2$$

$$\sqrt{f^2} = \sqrt{31.68}$$

$$f = 5.6\text{m}$$



$$13.5^2 = 12.6^2 + 16.2^2 - 2(12.6)(16.2) \times \cos H$$

$$182.25 = 421.2 - 408.24 \times \cos H$$

$$-421.2 \quad -421.2$$

$$\frac{-238.95}{-408.24} = \frac{-408.24 \times \cos H}{-408.24}$$

$$\cos H = 0.5853$$

$$H = 54^\circ$$

$$\frac{\sin 54^\circ}{13.5} = \frac{\sin I}{12.6}$$

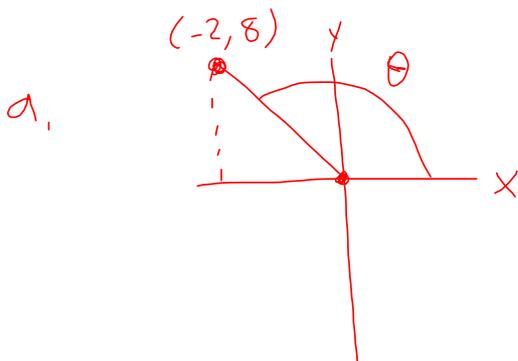
$$\sin I = 0.7551$$

$$I = 49^\circ$$

$$G = 180 - 49 - 54$$

$$G = 77^\circ$$

2. Given the coordinates of point P(-2, 8) on the terminal arm of angle θ
- Draw a sketch of the angle.
 - Determine the distance from the origin (0, 0) to the point.
 - Determine $\sin \theta$, $\cos \theta$ and $\tan \theta$ to four decimal places.
 - Determine the measure of angle θ .



b.

$$r^2 = 2^2 + 8^2$$

$$\sqrt{r^2} = \sqrt{68}$$

$$r = 8.2$$

c.

$$\sin \theta = \frac{8}{8.2} \quad \cos \theta = \frac{-2}{8.2} \quad \tan \theta = \frac{8}{-2}$$

$$\sin \theta = 0.9756 \quad \cos \theta = -0.2439 \quad \tan \theta = -4$$

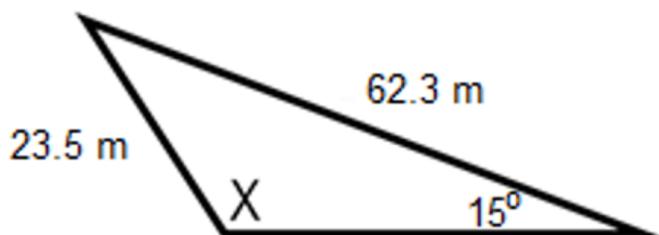
d.

use $\cos \theta$

$$\cos \theta = -0.2439$$

$$\theta = 104^\circ$$

3. Determine the measure of angle X, given that the angle is obtuse.



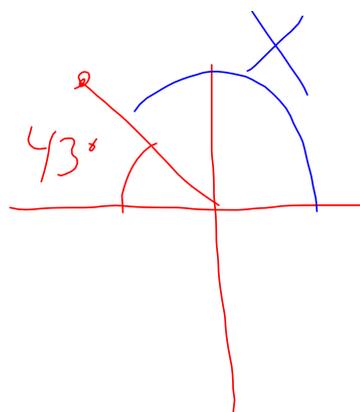
$$\frac{\sin 15^\circ}{23.5} = \frac{\sin X}{62.3}$$

$$\sin X = \frac{62.3 \times \sin 15^\circ}{23.5}$$

$$\sin X = 0.6861$$

$$X = 43^\circ$$

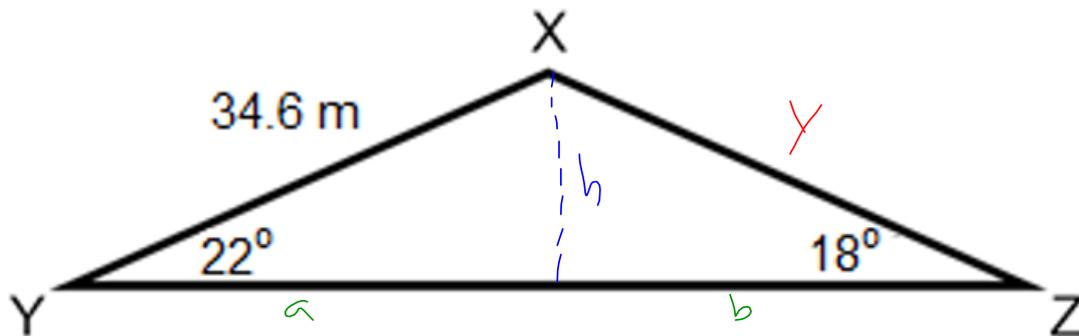
* it's obtuse!!



$$X = 180 - 43$$

$$X = 137^\circ$$

4. Determine the area of the triangle given below.



① Find y . using sine law (41.9m)

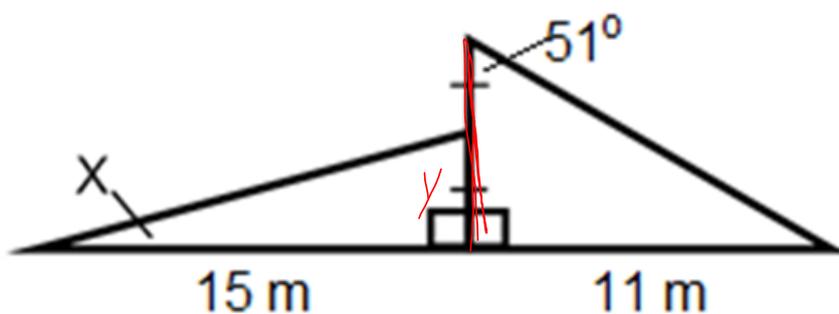
② Find h using sohcahtoa (14m)

③ Find a and b using sohcahtoa twice
 * $a+b$ is base of triangle

④ $A = \frac{\text{base} \times \text{height}}{2}$ (71.9m)

$a = 32.1\text{m}$
 $b = 39.8\text{m}$

$A = 503.3\text{m}^2$



① Find red line, cut in half.

$$\tan 51^\circ = \frac{11}{h}$$

$$h = 8.9 \text{ m}$$

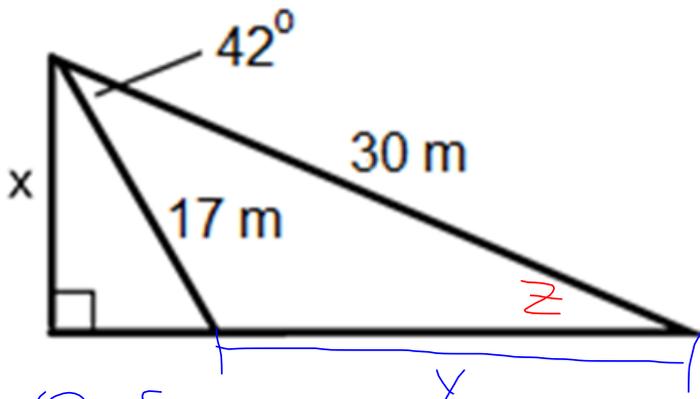
$$y = 4.45 \text{ m}$$

② Find X

$$\tan X = \frac{4.45}{15}$$

$$X = 16.5^\circ$$

*solutions
may vary



① Find y using Cosine Law (20.8 m)

② Find z using sine law (33°)

③ Find x using soh cah toa

$$\sin 33^\circ = \frac{x}{30}$$

$$x = 16.3\text{ m}$$

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