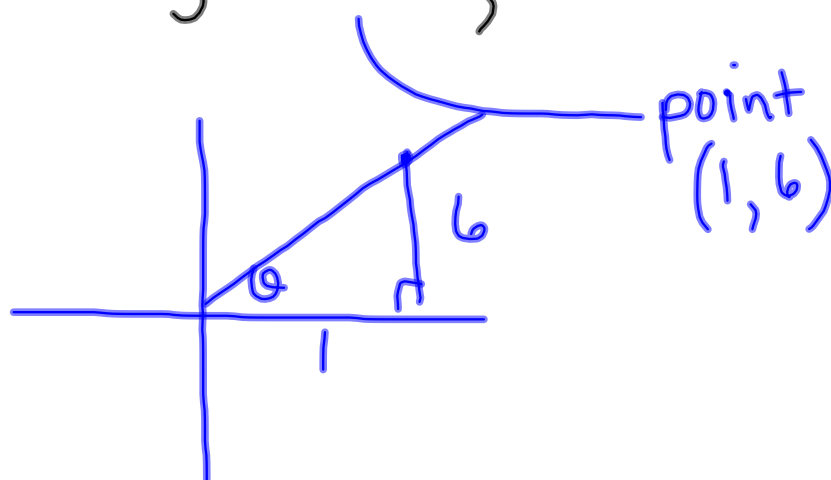


Questions from 2.2

#22 $y = 6x, x \geq 0$



Look at 22 b)

$$4y + 3x = 0$$

$$4y = -3x$$

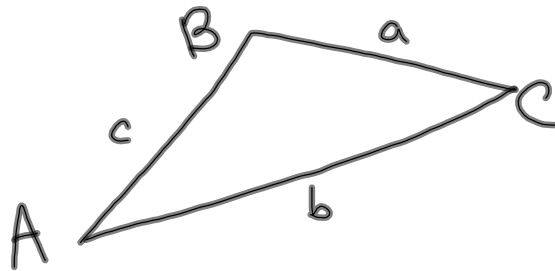
$$y = -\frac{3}{4}x$$

2.3 The Sine Law

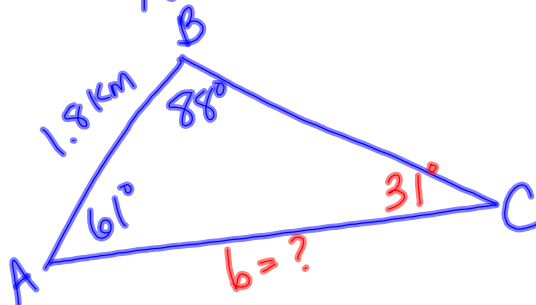
$$\frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C}$$

or

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



example 1 pg. 102



$$\frac{\sin 88^\circ}{b} \Rightarrow \frac{\sin 31^\circ}{1.8}$$

cross multiply

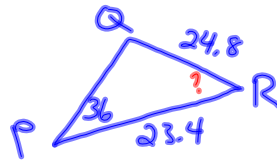
$$\sin 31^\circ (b) = 1.8 \sin 88^\circ$$

$$0.5150 b = 1.7989$$

$$b = 3.5 \text{ km}$$

Solving for an Angle

ex. 2 $\triangle PQR$, $\angle P = 36^\circ$, $p = 24.8\text{m}$
and $q = 23.4\text{m}$. Determine $\angle R$.



* We need to solve for $\angle Q$ first because side r is unknown

$$\frac{\sin 36^\circ}{24.8} = \frac{\sin Q}{23.4}$$

$$24.8 \sin Q = 23.4 \sin 36^\circ$$

$$\sin Q = \frac{23.4 \sin 36^\circ}{24.8}$$

$$\sin Q = 0.5546$$

$$\sin^{-1}(0.5546) \approx 34^\circ$$

$$\angle P = 36$$

$$\angle Q = 34$$

$$\angle R = 110^\circ$$

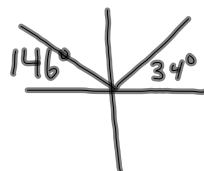
★ Ambiguous Case

Can happen in Sine Law when solving for an angle.
Remember, there are two possible angles.

From above;

$$\sin^{-1}(0.5546)$$

$$\angle Q = 34^\circ$$



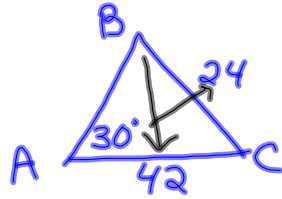
* 146° is another possible angle IF it works with given angle.

$$* 146^\circ + 36^\circ = 182^\circ \text{ given over } 180^\circ$$

pg. 105 explanation of when it occurs.

Ex. 3 pg. 106

$\triangle ABC$, $\angle A = 30^\circ$, $a = 24\text{cm}$, $b = 42\text{cm}$
Solve the triangle. (Find all measures)



$$\frac{\sin 30^\circ}{24} = \frac{\sin B}{42}$$

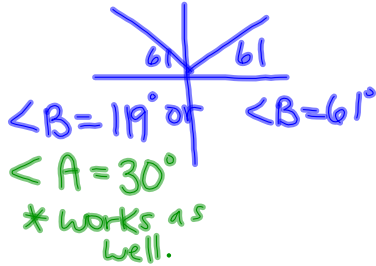
$$24 \sin B = 42 \sin 30^\circ$$

$$\sin B = \frac{42 \sin 30^\circ}{24}$$

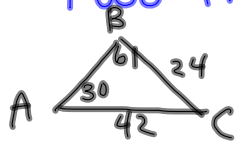
$$\sin B = 0.875$$

$$\angle B = 61^\circ$$

check the other angle



Two triangles to solve;



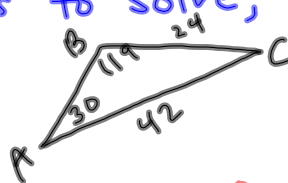
$$\angle C = 89^\circ$$

$$\frac{\sin 30^\circ}{24} = \frac{\sin 89^\circ}{c}$$

$$c \sin 30^\circ = 24 \sin 89^\circ$$

$$c = \frac{24 \sin 89^\circ}{\sin 30^\circ}$$

$$c = 48 \text{ cm}$$



$$\angle C = 31^\circ$$

$$\frac{\sin 30^\circ}{24} = \frac{\sin 31^\circ}{c}$$

was this the easy question?

$$c = \frac{24 \sin 31^\circ}{\sin 30^\circ}$$

$$c = 25 \text{ cm}$$