

MBF3C

Trig Quiz 1

Name: _____

1. Evaluate the following

a. $\sin 63^\circ =$ _____

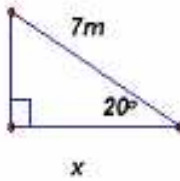
(round to four decimal places)

b. $\cos \angle B = 0.7621$ _____

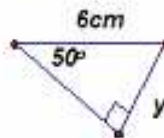
(round to one decimal place)

2. Use trigonometry to find the unknown values (to one decimal place).

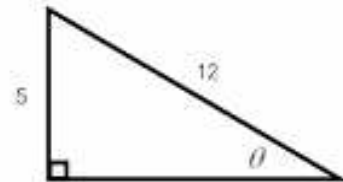
a)



b)



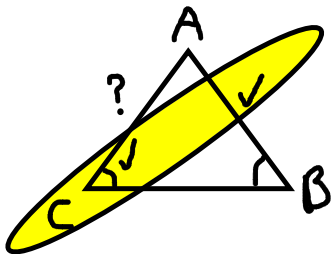
c)



1.6 Cosine Law

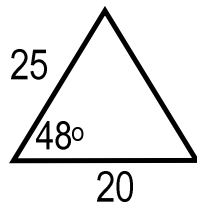
<https://v>

Sine law won't work for all cases...
 Sine law needs at least one side/angle pair...

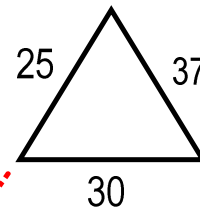


What if we have:

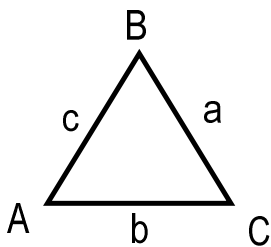
- Two sides and a contained angle?



- Only 3 sides and no angle?



Use the COSINE LAW

Cosine Law

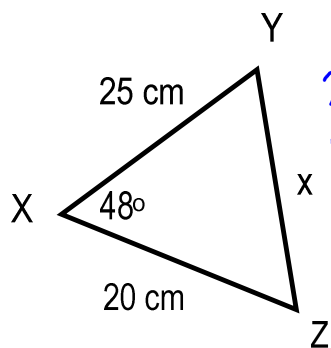
$$\bullet^2 = b^2 + c^2 - 2bc \cos A$$

to find a
side length

$$\cos \bullet = \frac{b^2 + c^2 - a^2}{2bc}$$

to find
an angle

Ex 1 - Find x, round to 1 decimal place



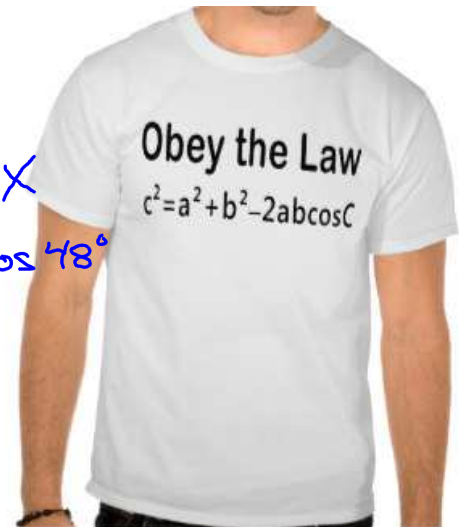
$$x^2 = y^2 + z^2 - 2yz \cos X$$

$$x^2 = 20^2 + 25^2 - 2(20)(25) \cos 48^\circ$$

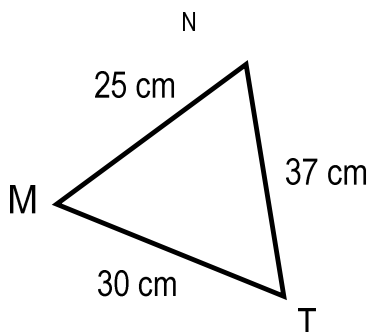
$$x^2 \doteq 355.2$$

$$x = \sqrt{355.2}$$

$$\doteq 18.9 \text{ cm}$$



Ex 2 - Find N, round to 1 decimal place



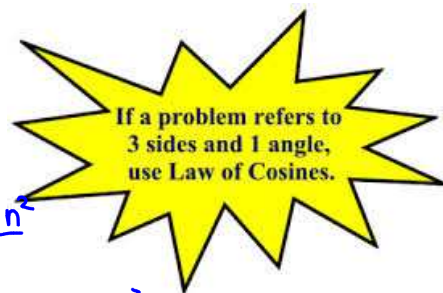
$$\cos N = \frac{m^2 + t^2 - n^2}{2mt}$$

$$\cos N = \frac{37^2 + 25^2 - 30^2}{2(37)(25)}$$

$$\cos N = \frac{1094}{1850}$$

$$N = \cos^{-1} \left(\frac{1094}{1850} \right)$$

$$N \doteq 53.7^\circ$$



Sine Law vs. Cosine Law

- 😊 given 2 angles and any side
(AAS)(ASA)
- 😊 given 2 sides and angle opposite one of the sides
(SSA)

- 😊 given 2 sides and the contained angle
(SAS ...finding a side)
- 😊 given 3 sides
(SSS...finding an angle)

Practice:
p. 39 #1bc, 2bc, 4, 5, 7

