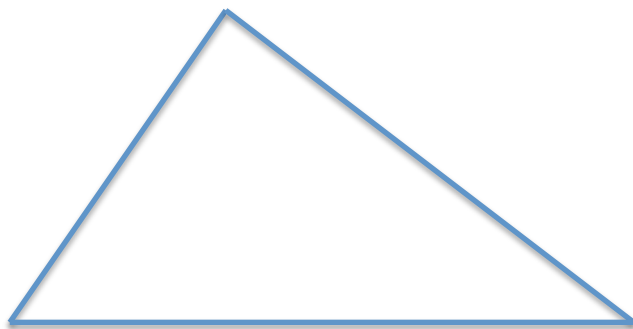


3.7 Cosine Law

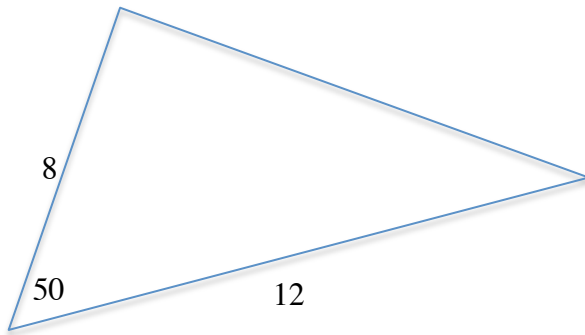
For non-right triangles that can't be solved with the sine law

SAS	SSS
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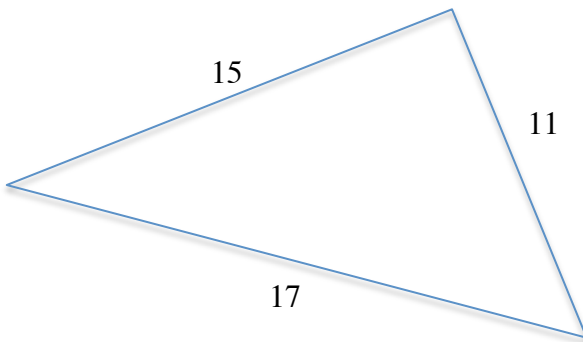
Cosine Law can be proven based on the _____ Theorem



Example #1:

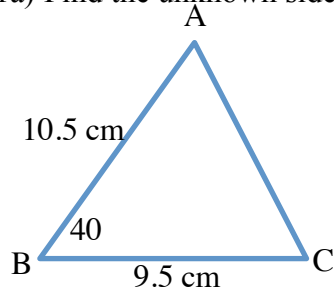


Example #2:

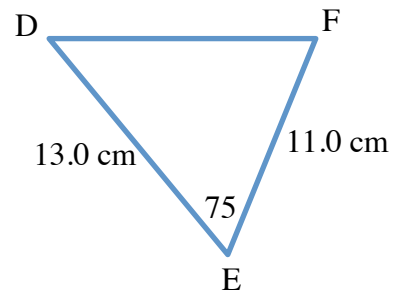


Assignment:

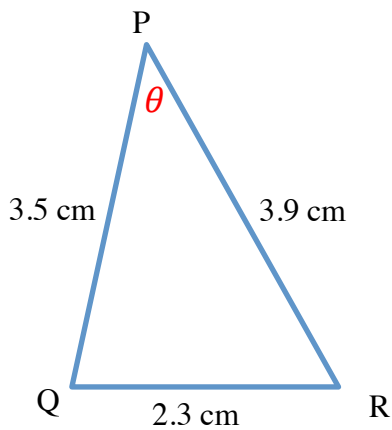
1a) Find the unknown side length



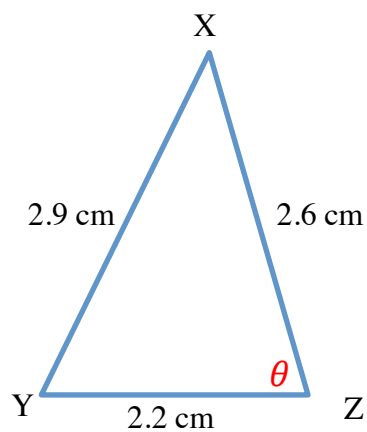
1b) Find the unknown side length



2a) Find the indicated angle



2b) Find the indicated angle



<p>3a) Sketch the triangle and find the unknown $w^2 = 15^2 + 16^2 - 2(15)(16)\cos 75^\circ$</p>	<p>3b) Sketch the triangle and find the unknown $48^2 = 46^2 + 45^2 - 2(46)(45)\cos G$</p>
<p>4a) Solve the triangle: In $\triangle DEF$, $d = 5.0$ cm, $e = 6.5$ cm, and $\angle F = 65^\circ$</p>	<p>4b) Solve the triangle: In $\triangle LMN$, $l = 5.5$ cm, $m = 4.6$ cm, and $n = 3.3$ cm</p>

Answer Key

1) a) 6.9 cm b) 14.7 cm

2) a) 35.7 b) 74

3) a)



$$w = 18.9$$

b)



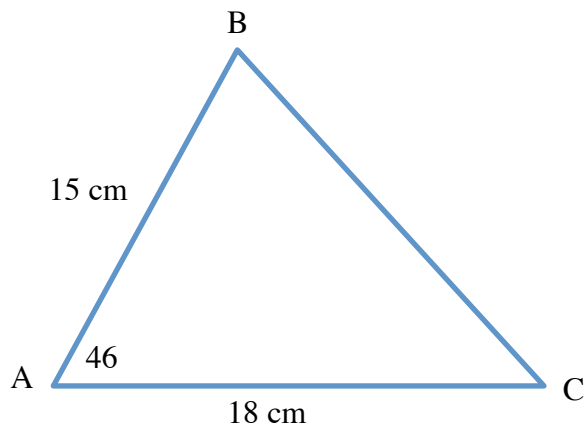
$$\angle Y = 63.7^\circ$$

4)

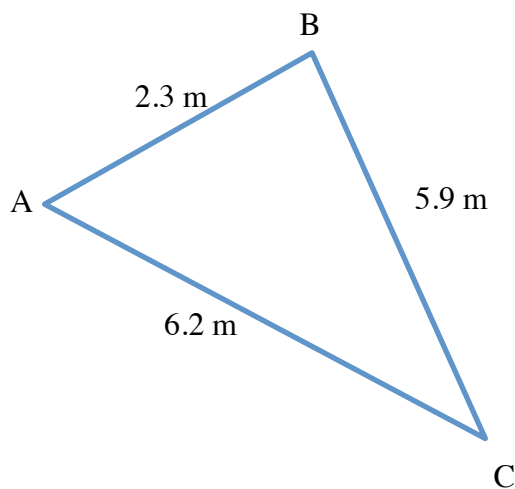
a) $f = 6.3$ cm, $\angle D = 45.9^\circ$, $\angle E = 69.1^\circ$ b) $\angle L = 86.6^\circ$, $\angle M = 56.6^\circ$, $\angle N = 36.8^\circ$

Practice Quiz

1) Use the Cosine Law to find the measure of side a .



2) Use the Cosine Law to find the measure of angle A.



Answers: 1) 13 cm 2) 72°