

Adv. Alg.-Trig.

HW tonight 9-7

Homework #9.6

Study for Quiz Monday

1) $\frac{53}{80}$

2) $\frac{73}{130}$

3) $-\frac{19}{100}$

4) 60

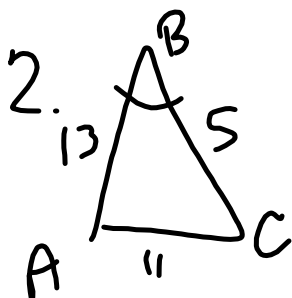
5) 120

6) 60

Practice Worksheet

9) $a = 13.0$

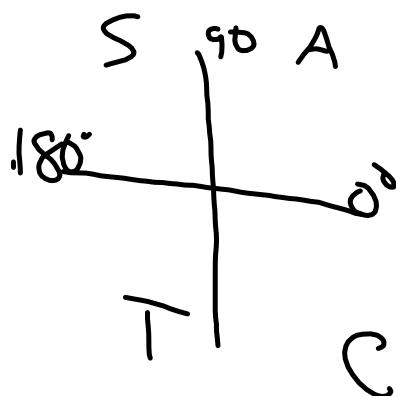
10) $A = 17^\circ$



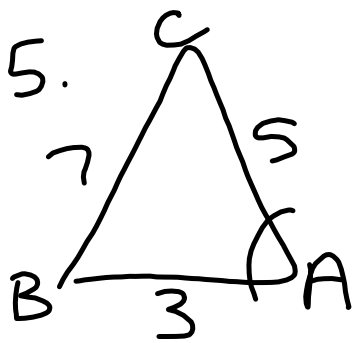
$$\cos B = \frac{a^2 + c^2 - b^2}{2ac}$$

$$\cos B = \frac{5^2 + 13^2 - 11^2}{2(5)(13)}$$

$$\cos B = \frac{73}{130}$$



3. $\cos B = \frac{19}{100}$



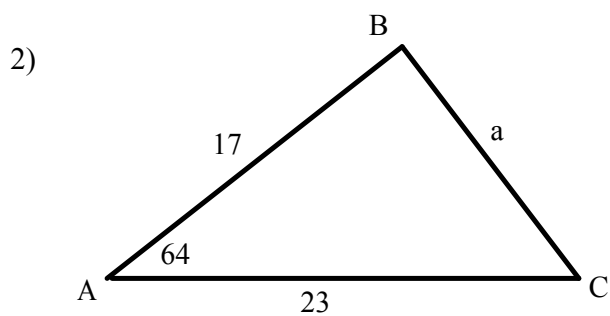
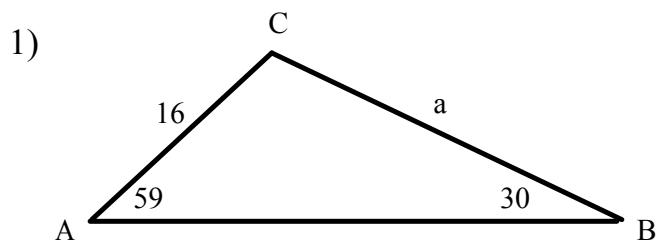
$$\cos A = \frac{5^2 + 3^2 - 7^2}{2(5)(3)}$$

$$\cos A = -.5$$

$$\cos^{-1}(-.5) = 120^\circ$$

Warm-Up

Law of Sines or Cosines? Give the equation.



Solving Triangles

Law of Sines:

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

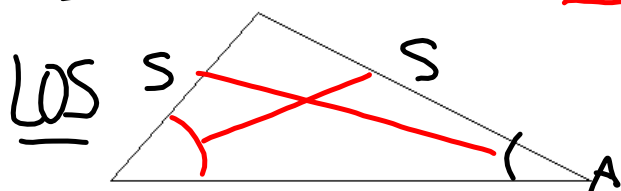
Law of Cosines:

$$c^2 = a^2 + b^2 - 2ab \cos C$$

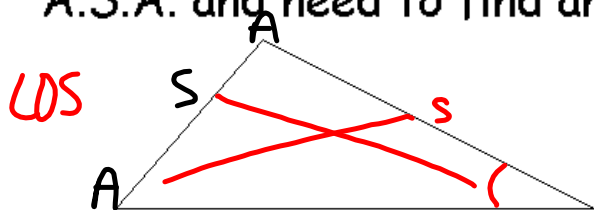
$$\cos C = \frac{a^2 + b^2 - c^2}{2ab}$$

When to use the Law of Sine and Cosine

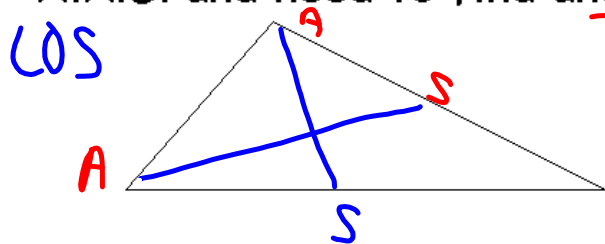
S.S.A. and need to find an angle



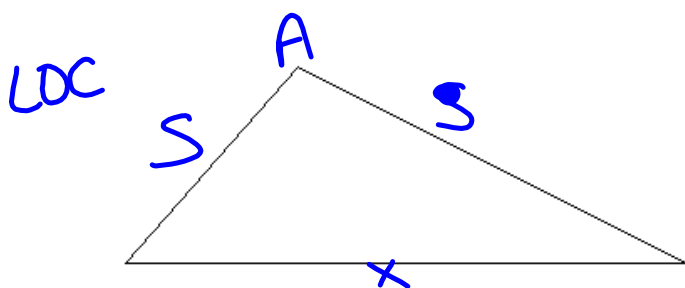
A.S.A. and need to find another side



A.A.S. and need to find another side

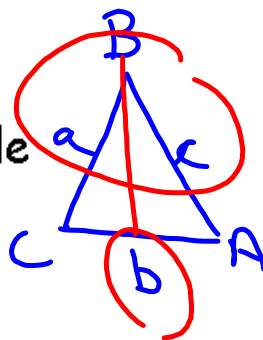
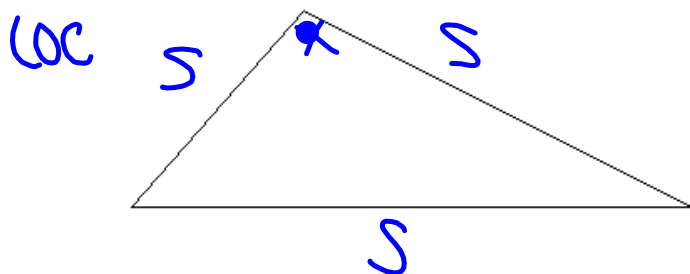


S.A.S. and need to need to find a side



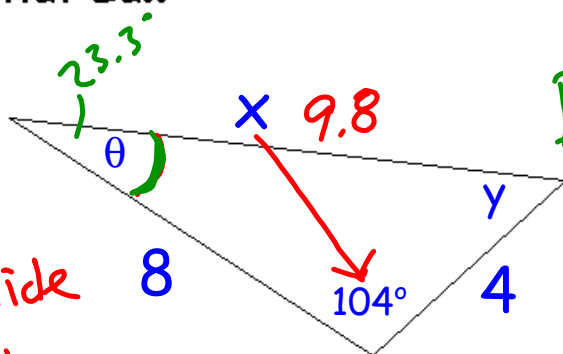
$$b^2 = a^2 + c^2 - 2ac \cos B$$

S.S.S. and need to find an angle



Name that Law

1)



X SAS
find side
LOC

$$x^2 = 8^2 + 4^2 - 2(8)(4)\cos 104^\circ$$

$$\sqrt{x^2} = \sqrt{95.4830}$$

$$x = 9.8$$

$$\boxed{\theta} \frac{4}{\sin \theta} = \frac{9.8}{\sin 104^\circ}$$

$$\sin \theta = .396$$

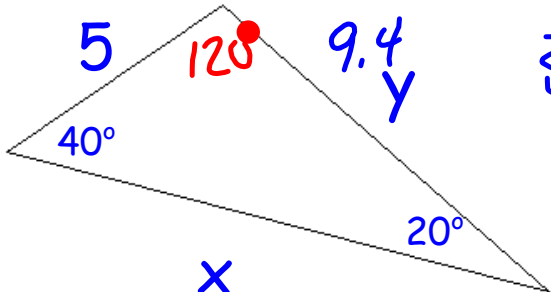
$$\sin^{-1}(.396) = 23.3^\circ$$

$$\boxed{y} 180 - 23.3 - 104$$

$$y = 52.7^\circ$$

2)

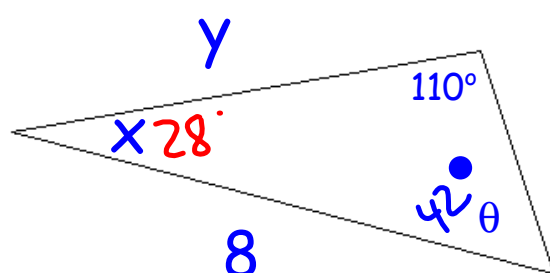
AAS



$180 - 20 - 40 = 120$

$$\frac{5}{\sin 20} = \frac{y}{\sin 40}$$
$$y = 9.4$$
$$\frac{x}{\sin 120} = \frac{5}{\sin 20}$$
$$x = 12.7$$

3)
SSA
LOS.



$$180 - 110 - 28 = 42$$

4

$$\frac{4}{\sin x} = \frac{8}{\sin 110}$$

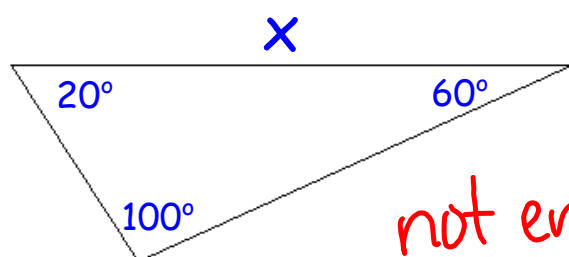
$$\sin x = .4698$$

$$x = 28^\circ$$

$$\frac{y}{\sin 42} = \frac{8}{\sin 110}$$

$$y = 5.7$$

4)



not enough info.

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1) 32

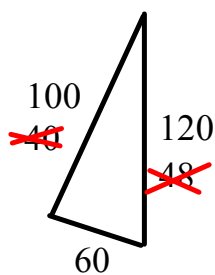
2) 37 in.

3) $x = 26$, total fence = 68

4) 123

5) 96

6) $29^{\circ}56'$



$\angle x$

