HW 5-4

1. 6 units^2
2. 18 units^2
3. 11
4. 23.2
5. $\frac{17}{28}$
6. a) 38°10' b)17.3 m^2
7. $\frac{7}{10}$

Tonight's HW: Replace pg 613#18 with #19. Round all answers to nearest tenth.

Dec 5-10:04 PM

Law of sines cosines and area of a triangle Unit 5 Day 5

Solve for x for each below:

Round answer to nearest hundredth

1) $\frac{\sin(68°)}{x} = \frac{\sin(37°)}{3}$

Find the angle to nearest 10 minutes

2) $23^2 = 37^2 + 18^2 - 2(37)(18)\cos(x)$

Nov 29-9:59 PM

Law of sines cosines and area of a triangle Unit 5 Day 5

Solve for x for each below:

Round answer to nearest hundredth

1) $\frac{\sin(68°)}{x} = \frac{\sin(37°)}{3}$

Find the angle to nearest 10 minutes

2) $23^2 = 37^2 + 18^2 - 2(37)(18)\cos(x)$

$x = \frac{3\sin 68°}{\sin 37°}$

$x = 4.62$

$\angle X = \cos^{-1}\left(\frac{23^2 - 37^2 - 18^2}{-2(37)(18)}\right)$

$\angle X = 29°10'$ $(29°5'16'')$

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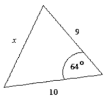
3) USE THE LAW OF SINES OR COSINES TO FIND X: Round to the nearest tenth



4) In ΔKLM ; $m = 11$, $l = 17$, $m\angle K = 59°$ and $m\angle M = 40°$ Find k. Round to the nearest ~~hundredth~~ tenth.

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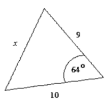
3) USE THE LAW OF SINES OR COSINES TO FIND X: Round to the nearest tenth



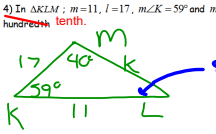
$x^2 = 9^2 + 10^2 - 2(9)(10)\cos 64°$

$\sqrt{x^2} = \sqrt{102.1}$

$x = 10.1$

SAS

4) In ΔKLM ; $m = 11$, $l = 17$, $m\angle K = 59°$ and $m\angle M = 40°$ Find k. Round to the nearest ~~hundredth~~ tenth.



81°

$k^2 = 17^2 + 11^2 - 2(17)(11)\cos 59°$

$\frac{k}{\sin 59°} = \frac{11}{\sin 40°}$

$k = \frac{11 \cdot \sin 59°}{\sin 40°}$

$k = 14.7$

✓ASA ✓AAS SAS ✓SSA

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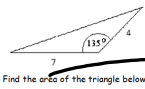

SAS

5) Find the area of the triangle below: Round to the nearest tenth

$A_\Delta = \frac{1}{2}ab\sin C$

$= \frac{1}{2}(4)(7)\sin 135°$

$= 9.9 \text{ units}^2$

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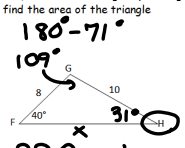
6-7) Solve each triangle by finding all of the missing side lengths and angle measures and find the area of the triangle



$180° - 71° = 109°$

SSA → Law of Sines

$\frac{10}{\sin 40°} = \frac{8}{\sin H}$

$\angle H = \sin^{-1}\left(\frac{8 \sin 40°}{10}\right)$

$\approx 31°$

$\text{Area}_\triangle = \frac{1}{2}(8)(10)\sin 109°$

$= 38 \text{ units}^2$

$\frac{x}{\sin 109°} = \frac{10}{\sin 40°}$

$x = \frac{10 \cdot \sin 109°}{\sin 40°}$

$x = 15$

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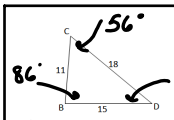

SSS

$\angle B = \cos^{-1}\left(\frac{18^2 - 11^2 - 15^2}{-2(11)(15)}\right)$

$\angle C = \cos^{-1}\left(\frac{15^2 - 11^2 - 18^2}{-2(11)(18)}\right)$

$A_\triangle = \frac{1}{2}(11)(18)\sin 56°$

$\approx 82 \text{ units}^2$

$\angle D = \cos^{-1}\left(\frac{11^2 - 15^2 - 18^2}{-2(15)(18)}\right)$

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