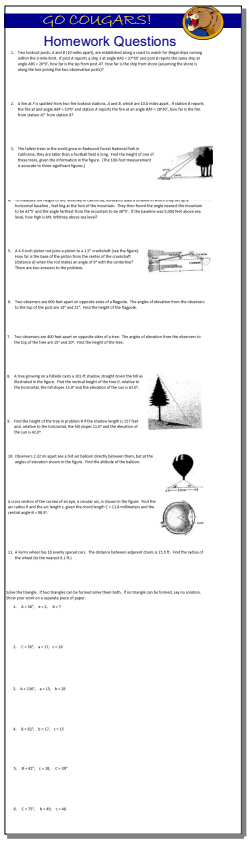
LOS Word Problem Worksheet answers

1. ship to post A = 4.06 miles and ship to shore = 2.47 miles
2. AF = 8.06 miles, BF = 4.82 miles
3. height = 354.4 ft
4. 14,498.01 ft
5. 5.77 and 3.12
6. 108.6 ft
7. 61.7 ft
8. 158.9 ft
9. 108.8 ft
10. 1.64 miles
11. R = 7.76 mm, s = 13.4 mm
12. 39.73 ft

More LOS Practice Worksheet

1. no triangle
2. A = 38.6, B = 105.4, b = 26.2
   A = 141.4, B = 2.6, b = 1.2
3. no triangle
4. A = 37.1, C = 60.9, a = 10.4
5. A = 99, a = 28.3, b = 19.1
6. A = 24.6, B = 80.4, a = 20.7
   A = 5.4, B = 99.6, a = 4.7

Mar 20-8:19 AM


GO COUGARS!

Homework Questions

Feb 2-9:51 PM

6.2 Law of Cosines

Solving Triangles

Finding Area

Heron's Formula

Mar 20-9:19 AM

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

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

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

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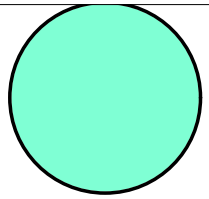
Example 1 $A = 44.49$ $a = 19$

$B = 62°$ $b = 23.94$

SAS $C = 73.52$ $c = 26$

180.01



1) find side b

$b^2 = 19^2 + 26^2 - 2(19)(26)\cos 62$

$b = \sqrt{19^2 + 26^2 - 2(19)(26)\cos 62}$

$b = 23.94$

2) find angle A using Law of Cosines

$19^2 = 26^2 + 23.94^2 - 2(26)(23.94)\cos A$

coefficient of cosA

divide by coefficient

$\cos^{-1}\left(\frac{19^2 - 26^2 - 23.94^2}{2(26)(23.94)}\right) = \cos A$

$44.49 = A$

3) find angle C

$26^2 = 19^2 + 23.94^2 - 2(19)(23.94)\cos C$

$\frac{26^2 - 19^2 - 23.94^2}{-2(19)(23.94)} = \cos C$

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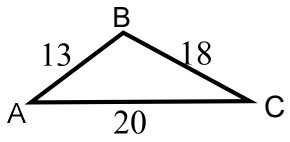
Example 2 SSS

$A =$ 61.89 $a = 18$

$B =$ 78.54 $b = 20$

$C =$ 39.57 $c = 13$

180



A: $\frac{18^2 - 20^2 - 13^2}{-2(20)(13)} = \cos A$

B: $\frac{20^2 - 18^2 - 13^2}{-2(20)(13)} = \cos B$

C: $\frac{13^2 - 20^2 - 18^2}{-2(20)(18)} = \cos C$

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Example 3

$A = 10°$ $a =$

$B =$ $b = 15$

$C =$ $c = 8$

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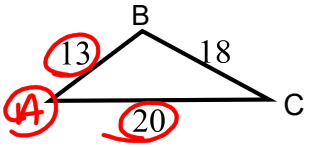
Area when no angles are given

Method 1: $K = \frac{1}{2}ab\sin C$

From Example #2:



$A = 61.9°$ $a = 18$

$B = 78.5°$ $b = 20$

$C = 39.6°$ $c = 13$

1. Find one angle using LOC

2. use $K = \frac{1}{2}ab\sin C$ with SAS

$K = \frac{1}{2}(20)(13)\sin 61.9$

$= 114.67 \text{ units}^2$

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Method 2: Heron's Formula (no angle needed!)

$K = \sqrt{s(s-a)(s-b)(s-c)}$ given $s = \dfrac{a+b+c}{2}$

From Example #2:

$a = 18$

$b = 20$

$c = 13$

$s = \frac{18+20+13}{2}$

$s = 25.5$

$K = \sqrt{25.5(25.5-18)(25.5-20)(25.5-13)}$

$= 114.67 \text{ units}^2$

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HOMEWORK

p421
3, 7, 9, 11, 23, 39-45 odd

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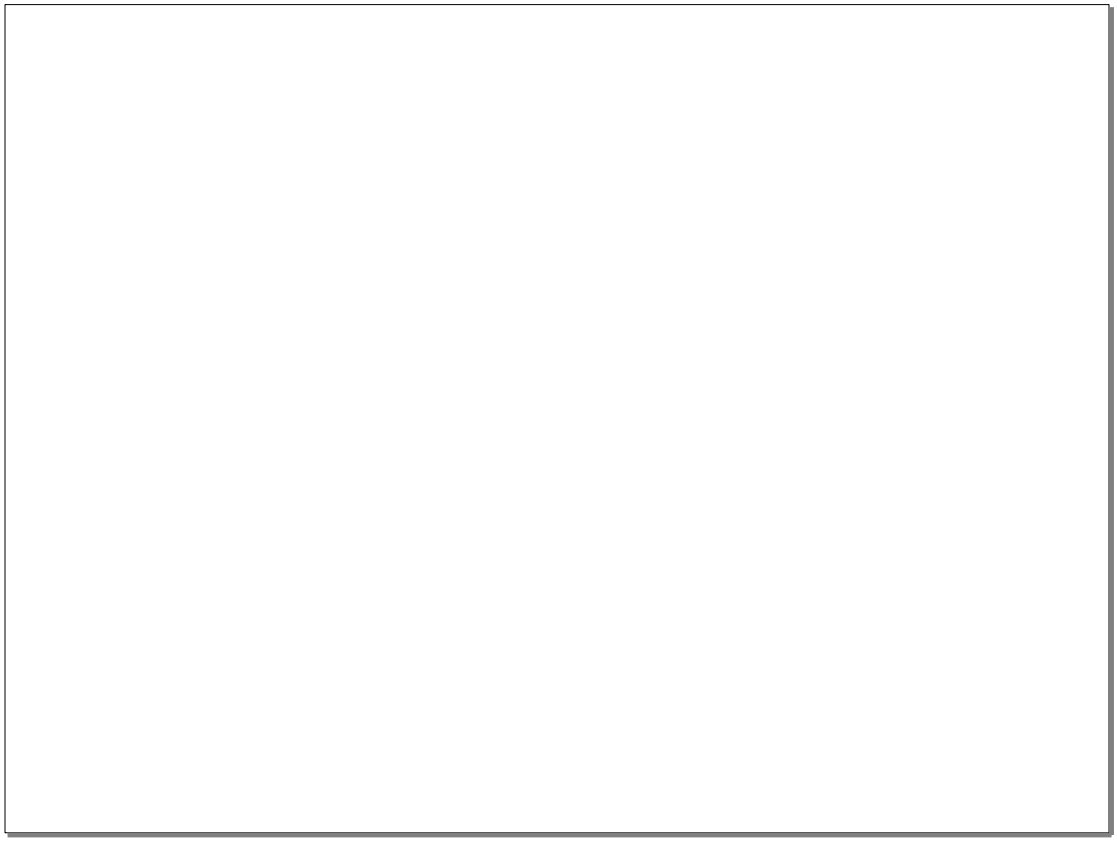

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