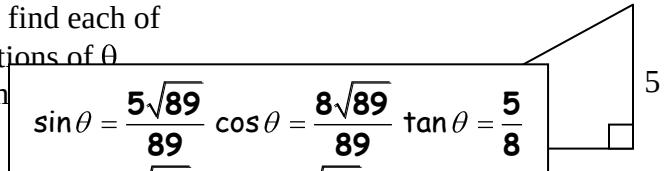
Ch 13 Review Answers BLANK WORKSHEET -PAGE DOWN

Complete the following problems on a **separate piece of paper**.

NOTES
Show all necessary work.
You are not allowed to use your unit circle on the test.
The test will include a non-calculator portion

13-1 Right Triangle Trig

1. Use the triangle at right to find each of the six trigonometric functions of θ
   Use simplified radical form



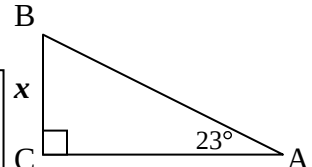
$\sin\theta = \frac{5\sqrt{89}}{89}$ $\cos\theta = \frac{8\sqrt{89}}{89}$ $\tan\theta = \frac{5}{8}$

$\csc\theta = \frac{\sqrt{89}}{5}$ $\sec\theta = \frac{\sqrt{89}}{8}$ $\cot\theta = \frac{8}{5}$

I need to use:
soh
cah
toa

2. Find the value of x.

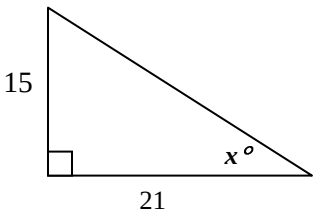
a)



$\tan 23 = \frac{x}{100}$

$x = 42.5mm$

b)



$\tan x = \frac{15}{21}$

$x = 36^\circ$

3. When a 6-foot tall pole casts a 4-foot shadow, what is the angle of elevation of the sun? (Round the nearest degree).

$\tan x = \frac{6}{4}$

$x = 56^\circ$

Angles and Angle Measure

5. Draw each angle in standard position:

a. -225° b. $\frac{15\pi}{6}$ c. -1020°

I can add or subtract 360°

6. Find positive angles coterminal with each of the following:

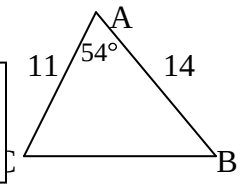
a. $\left(\frac{-2\pi}{3}\right)$ b. -445° c. –330

$\frac{4\pi}{3}$	275°	30°

13-4 Law of Sines

7. Find the area of each triangle:

a.



Area= $62.29un^2$

b. $\angle C = 32^\circ, a = 18, b = 15$

Area $=71.55un^2$

8. Solve ΔABC. (You may get 0, 1 or 2 solutions!!)

a. $\angle A = 50^\circ, a = 34, b$

b. $\angle A = 24^\circ, a = 3, b =$

c. $\angle A = 125^\circ, a = 22, b$

$\angle B = 64^\circ, \angle C = 66^\circ, c = 40.5$ #2 – $\angle B = 116^\circ, \angle C = 14^\circ, c = 10.7$

$\varnothing$

$\angle B = 34^\circ, \angle C = 21^\circ, c = 9.6$

9. Sarah Phillips, an officer for the Department of Fisheries and Wildlife, checks boaters on a lake to make sure they do not disturb two osprey nesting sites. She leaves a dock and heads due north in her boat to the first nesting site. From here, she turns 5° north of due west and travels an additional 2.14 miles to the second nesting site. She the travels 6.7 miles directly back to the dock. How far from the dock is the first nesting site? Round to the nearest tenth.

6.14 miles

13-5 Law of Cosines

10. Solve ΔABC.

a. $\angle C = 35^\circ, a = 5, b = 8$

b. $\angle B = 71^\circ, c = 6, a = 11$

c. $a = 16.4, b = 21.1, c = 18.5$

$\angle A = 36^\circ, \angle B = 109^\circ c = 4.84$

$\angle C = 32^\circ, \angle A = 77^\circ, b = 10.67$

$\angle C = 58^\circ, \angle A = 48^\circ, \angle B = 74^\circ$

11. A balloonist is directly above a straight road 1.5 miles long that is between 2 villages. She notes that the angle of depression to the village closest to her is 35° and the angle of depression to the other village is 31°. How high above the ground is the balloon? .485miles

13.3/13.6 Trigonometric Functions of General Angles

12. Find the reference angle for each of the following

a. $-\frac{11\pi}{3}$ b. -120° c. 135°

$\frac{\pi}{3}$	60°	45°

13. Find the exact value of each expression. Do not use a calculator or unit circle.

a. tan 120° b. cot (-210°) c. csc 510° d. $\cos\frac{13\pi}{4}$ e. $\sec\frac{11\pi}{6}$ f. $\sin\frac{-7\pi}{3}$

$-\sqrt{3}$	$-\sqrt{3}$	2	$-\frac{\sqrt{2}}{2}$	$\frac{2\sqrt{3}}{3}$	$-\frac{\sqrt{3}}{2}$

g. $\cos\frac{9\pi}{2}$ h. $\csc 8\pi$ i. $\frac{\cos 60^\circ + \sin 30^\circ}{4}$ j. $(\sin 30^\circ)^2 + (\cos 30^\circ)^2$

0	*undefined*	$\frac{1}{4}$	1

13.7 Inverse Trigonometric Functions

14. Find the exact value of each expression. Do not use a calculator.

a. $\text{Sin}^{-1}\,1$ b. $\text{Cos}^{-1}\,\frac{1}{2}$ c. $\text{Tan}^{-1}\left(-\frac{\sqrt{3}}{3}\right)$ d. $\arccos\left(\frac{-\sqrt{2}}{2}\right)$ e. $\tan(\text{Sin}^{-1}\left(-\frac{1}{2}\right))$

90°	60°	-30°	135°	$-\frac{\sqrt{3}}{3}$