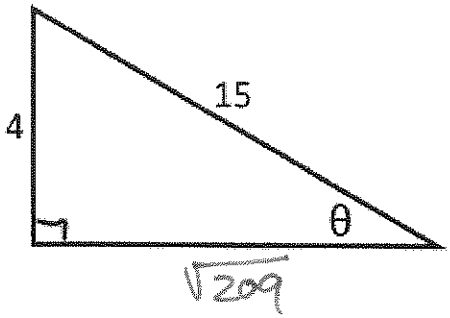
Name KEY Algebra 2 Practice Quiz 13.1 – 13.4

1. Evaluate the six trig functions of the angle θ. Write your answers in simplest radical form. Show/explain your work.

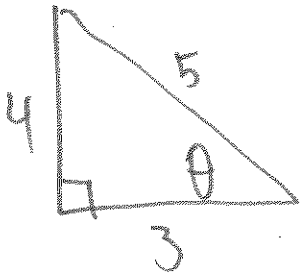
$\sin\theta = \frac{4}{15}$ $\cos\theta = \frac{\sqrt{209}}{15}$ $\tan\theta = \frac{4}{\sqrt{209}}$



$\csc\theta = \frac{15}{4}$ $\sec\theta = \frac{15}{\sqrt{209}}$ $\cot\theta = \frac{\sqrt{209}}{4}$

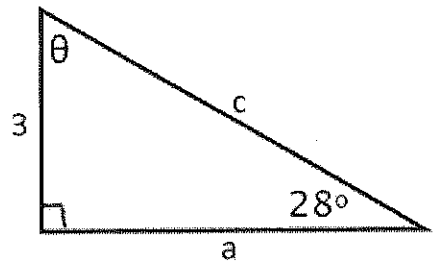
2. Let θ be an acute angle of a right triangle. Draw and label the triangle. Then find the values of the other five trig functions of θ. Write your answers in simplest radical form. Show/explain your work.

$\sin\theta = \frac{4}{5}$ $\cos\theta = \frac{3}{5}$ $\tan\theta = \frac{4}{3}$ $\csc\theta = \frac{5}{4}$



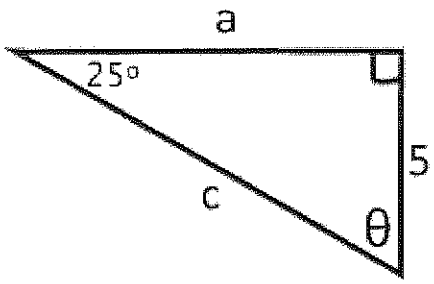
$\sec\theta = \frac{5}{3}$ $\cot\theta = \frac{3}{4}$

3. Find each missing side and angle. Round answers to the nearest hundredth. Show work.



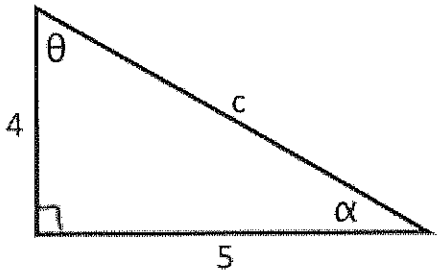
a = 5.64 c = 6.39 θ = 62°

4. Find each missing side and angle. Round answers to the nearest hundredth. Show work.



a = 10.72 c = 11.83 θ = 65°

5. Find each missing side and angle. Round answers to the nearest hundredth. Show work.



c = 6.40 α = 38.66 θ = 51.34

6. Convert the degree measure to radians or the radian measure to degrees. Show work. Write answers as simplified fractions.

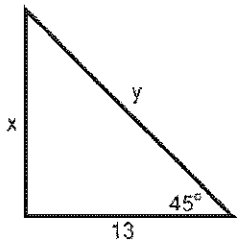
a. 220°

$\frac{11\pi}{9}$

b. $\frac{11\pi}{6}$

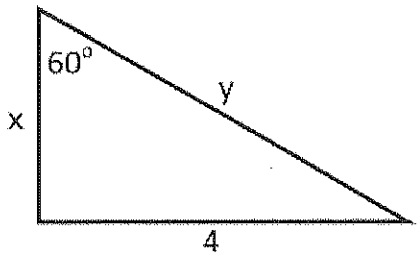
330°

7. Find the EXACT VALUE (simplest radical form if necessary) of x and y. Show work.



x = 13 y = $13\sqrt{2}$

8. Find the EXACT VALUE (simplest radical form if necessary) of x and y. Show work.



x = $\frac{4}{\sqrt{3}}$ OR $\frac{4\sqrt{3}}{3}$ y = $\frac{8}{\sqrt{3}}$ OR $\frac{8\sqrt{3}}{3}$

For 9 - 14, complete each part for each expression:

A. Determine in which quadrant the angle θ lies.
B. Determine the reference angle θ'.
C. Find the indicated ratio for θ'. This must be an <u>exact value.</u>
D. Determine the value for the original expression using the ASTC mneumonic.

	A	B	C	D
9. $\cos \frac{3\pi}{4}$	II	45	$\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$
10. $\tan \frac{5\pi}{6}$	II	30	$\frac{\sqrt{3}}{3}$	$-\frac{\sqrt{3}}{3}$
11. sec 225	III	45	$\sqrt{2}$	$-\sqrt{2}$
12. sin 240	III	60	$\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{2}$
13. $\cos \frac{7\pi}{6}$	III	30	$\frac{\sqrt{3}}{2}$	$-\frac{\sqrt{3}}{2}$
14. $\sin \frac{7\pi}{4}$	IV	45	$\frac{\sqrt{2}}{2}$	$-\frac{\sqrt{2}}{2}$

15. Find all possible values θ (between 0 and 360) for which ...

a. $\sin \theta = \frac{1}{2}$ — 30 and 150

b. $\cos \theta = 0$ — 90 and 270

c. $\sin \theta = -\frac{\sqrt{3}}{2}$ — 240 and 300

d. $\tan \theta$ = undefined — 90 and 270

e. $\sin \theta = -1$ — 270

f. $\cos \theta = \frac{\sqrt{2}}{2}$ — 45 and 315