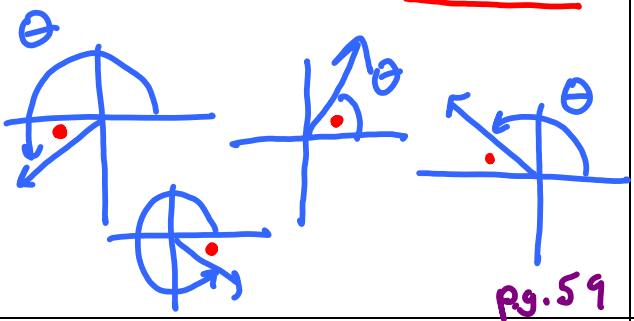
Trig Review 2.1-2.3 (post xmas break) Name: Key

No Calculators

1. Draw an example of a "reference angle."



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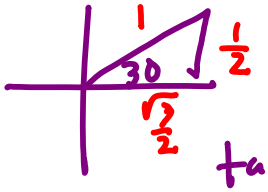
2. Find the six trigonometric function values for a 30° angle.



$\sin 30 = \frac{1}{2}$ $\quad \csc 30 = 2$

$\cos 30 = \frac{\sqrt{3}}{2}$ $\quad \sec 30 = \frac{2\sqrt{3}}{3}$

$\tan 30 = \frac{\sqrt{3}}{3}$ $\quad \cot 30 = \sqrt{3}$

3. Write the function in terms of its cofunction cot (75°)

$\tan 15$

4. Write the function in terms of its cofunction sin (40° 52′ 24″)

$\cos 49° 7' 36''$

5. Find one solution for the equation $\sin(\theta) = \cos(\theta - 12)$

$\theta + \theta - 12 = 90$

$2\theta = 102$

$\theta = 51°$

6. Find one solution for the equation $\tan(\theta+10) = \cot(2\theta+20)$

$\theta + 10 + 2\theta + 20 = 90$

$\theta = 20°$

7. Lil Chicken was asked to give the exact value of sin 60°. Using a calculator, she gave the answer 0.866025403. Explain why this answer is incorrect.

She gave a rounded answer not exact.

8. Explain how to find the csc (315°) on your calculator. Be sure to include the identities used in your explanation!

$\frac{1}{\sin 315}$ To find csc 315, you would want to use the reciprocal identity $\csc\theta = \frac{1}{\sin\theta}$.

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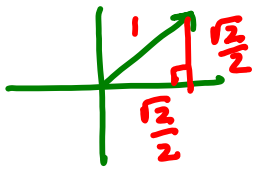
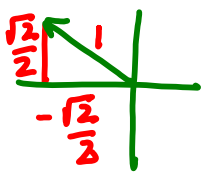
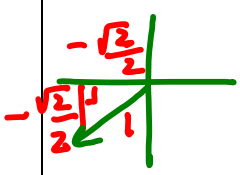
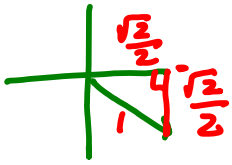
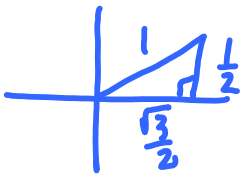
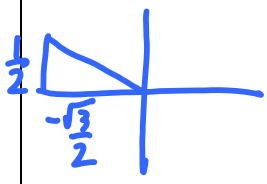
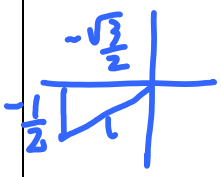
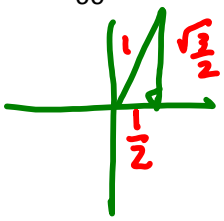
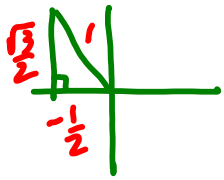
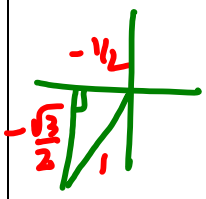
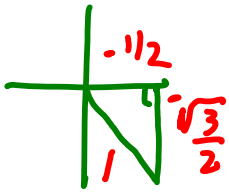
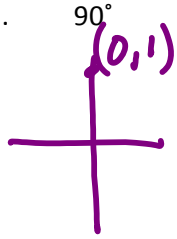
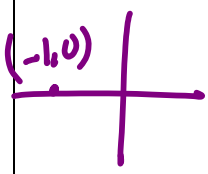
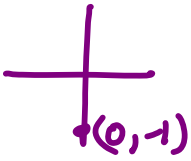
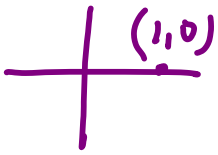
1. Draw the "reference triangles" for the angles in standard position. Label the sides appropriately. If the angle is a quadrantal angle, label the x-value, y-value, and r-value.

a. 45° 	b. 135° 	c. 225° 	d. 315° 
e. 30° 	f. 150° 	g. 210° 	h. 330° 
i. 60° 	j. 120° 	k. 240° 	l. 300° 
m. 90° 	n. 180° 	o. 270° 	p. 0° or 360° 

2. Using the diagrams above, find the following trig function values.

a. Cos 135°= $-\frac{\sqrt{2}}{2}$ b. sin 240°= $-\frac{\sqrt{3}}{2}$ c. tan 45°= 1

d. sec 180°= -1 e. cot 270°= 0 f. sin 360°= 0

g. tan 210°= $\frac{\sqrt{3}}{3}$ h. csc 300°= $-\frac{2\sqrt{3}}{3}$ i. tan 225°= 1

j. sin 90°= 1 k. cos 315° = $\frac{\sqrt{2}}{2}$ l. cot 0° = $\emptyset$

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Simplify each expression.

3. Cos 180° sin 45° + sin 180° cos 45°	4. 4(tan 135°) – 3(cot 225°) + sin 90°
5. 2 (cos 300°)(cos 120°) + 2 (cos 300°)(sin120°)	6. $\frac{1}{2}\cos 150° + 3\tan 30° + \sec 330°$
7. $\cos^2(210°) + \sin^2(210°)$	8. 2 sec (-495°)

Using your calculator, simplify each expression.

9. tan 68° 43'	10. $\frac{1}{\cot 51.4283°}$	11. csc 35.8471°

Using your calculator, find the measure of each angle.

12. cos Θ = 0.9211854	13. cot Θ = 1.4466474	14. tan Θ = $-\frac{\sqrt{2}}{2}$