Algebra 2/Trig—H **HW #_____** **Do all work <u>neatly</u> on your own paper.**
Review: 13.1-13.4

Part 1: No calculators.

1. Sketch an angle with degree measure -476º. Find (a) the quadrant where the angle terminates, (b) the measure of the reference angle, (c) a positive angle coterminal with the given angle, and (d) a negative angle coterminal with the given angle.

2. Sketch an angle with degree measure $\frac{11\pi}{12}$. Find (a) the quadrant where the angle terminates, (b) the measure of the reference angle, (c) a positive angle coterminal with the given angle, and (d) a negative angle coterminal with the given angle.

3. (a) Convert 260º to radian measure in simplest form. (b) Convert $\frac{11\pi}{4}$ to degrees.

4. Draw triangles and find exact values in simplest form.

(a) cos (-210º) (b) csc 675º

(c) $\tan\left(\frac{-2\pi}{3}\right)$ (d) $\sec\left(\frac{7\pi}{3}\right)$

5. The terminal side of angle θ in standard position passes through (-6, -5). Draw a triangle and find exact values in simplest form for all six trig functions of θ.

6. Draw triangles and find angle measures in degrees and radians, or exact values in simplest form.

(a) $\sin^{-1}\left(\frac{\sqrt{2}}{2}\right)$

(b) $\tan^{-1}\left(\frac{\sqrt{3}}{3}\right)$

(c) $\cot^{-1}\left(\tan\left(-60°\right)\right)$

(d) $\tan^{-1}\left(\cot\left(\frac{-5\pi}{4}\right)\right)$

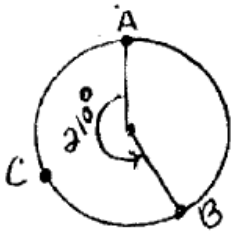
(e) $\sin\left(\cos^{-1}\left(\frac{2}{3}\right)\right)$

(f) $\tan\left(\csc^{-1}\left(\frac{-8}{7}\right)\right)$

7. A sector of a circle has radius 4 cm and central angle 210º.

(a) Find length of arc *ACB*.

(b) Find the area of the sector with central angle 210º.



arc length: $s = r\theta$
sector area: $A = \frac{1}{2}r^2\theta$

Part 2: Use your calculator.

8. Find values rounded to the 4th decimal place.

(a) sec 151º (b) cot (-132º)

9. Find the value of θ that makes each statement true. Round angle measures to the nearest tenth.

(a) sin θ = .5132, where $90° < \theta < 180°$

(b) cos θ = -.7392, where $180° < \theta < 360°$

10. Solve ΔEAT, if $\angle E = 32º$, $e = 15$, and $a = 18$. Give <u>both</u> possible answer sets and round to the nearest tenth.

Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω Ω

Answers:

1. (a) Q3 (b) 64º (c) 244º (d) -116º

2. (a) Q2 (b) $\frac{\pi}{12}$ (c) $\frac{35\pi}{12}$ (d) $\frac{-13\pi}{12}$

3. (a) $\frac{13\pi}{9}$ (b) 495º

4. (a) $\frac{-\sqrt{3}}{2}$ (b) $-\sqrt{2}$ (c) $\sqrt{3}$ (d) 2

5. $\sin\theta = \frac{-5\sqrt{61}}{61}$, $\cos\theta = \frac{-6\sqrt{61}}{61}$, $\tan\theta = \frac{5}{6}$, $\csc\theta = \frac{-\sqrt{61}}{5}$, $\sec\theta = \frac{-\sqrt{61}}{6}$, $\cot\theta = \frac{6}{5}$

6. (a) 45º, $\frac{\pi}{4}$ (b) 30º, $\frac{\pi}{6}$ (c) 150º, $\frac{5\pi}{6}$ (d) -45º, $\frac{-\pi}{4}$ (e) $\frac{\sqrt{5}}{3}$ (f) $\frac{-7\sqrt{15}}{15}$

7. (a) $\frac{14\pi}{3}$ cm (b) $\frac{28\pi}{3}$ cm^2

8. (a) -1.1434 (b) .9004

9. (a) 149.1º (b) 222.3º

10. $\angle A \approx 39.5$ º, $\angle T \approx 108.5$ º, $t \approx 26.8$ or $\angle A \approx 140.5$ º, $\angle T \approx 7.5$ º, $t \approx 3.7$