Name: Key

4.2

Angles!(mostly)

For 1-6, find the measure of each reference angle.

1) 327° 2) 148° 3) 563° 4) -421° 5) $\frac{5\pi}{4}$ 6) $-\frac{\pi}{3}$

33° 32° 23° 61° $\frac{-4\pi}{4}$ $\pi/4$ $\pi/3$

For 7-10, identify all angles that are coterminal with each angle. Then, find one positive and one negative angle that are coterminal with each angle.

7) 30° 8) -225° 9) $\frac{5\pi}{6}$ 10) $-\frac{4\pi}{3}$

$30 \pm 360n$ $-225° \pm 360n$ $\frac{5\pi}{6} \pm 2\pi n$ $-\frac{4\pi}{3} \pm 2\pi n$

$-330° + 390°$ $135° + -585°$ $\frac{17\pi}{6} + -\frac{7\pi}{6}$ $\frac{2\pi}{3} + -\frac{10}{3}\pi$

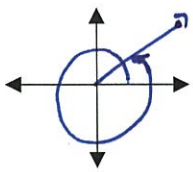
For 11-14, convert from radians to degrees or degrees to radians respectfully. When applicable leave in terms of π.

11) $\frac{7\pi}{10}\left(\frac{180}{\pi}\right)$ 12) $\frac{\pi}{8}\left(\frac{180}{\pi}\right)$ 13) 118°$\left(\frac{\pi}{180}\right)$ 14) -91°$\left(\frac{\pi}{180}\right)$

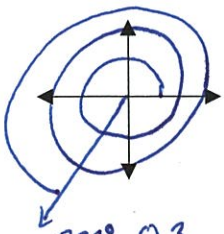
126° $\frac{45}{2}$ = 22.5° $\frac{59\pi}{90}$ $-\frac{91\pi}{180}$

For 15-18, draw each angle. Then, if each angle is in standard position, determine a coterminal angle that is between 0° and 360°. Finally, state the quadrant in which the terminal sides lies.

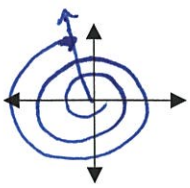
15) 400° 16) 940° 17) -624° 18) -280°



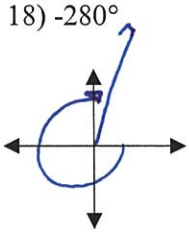
40°, Q1



220°, Q3



96°, Q2



80°, Q1

For 19 & 20, given the measurement of a central angle, find the length of its intercepted arc in a circle of radius 14 cm. Round to the nearest tenth.

$s = r\theta$	$A = \frac{1}{2}r^2\theta$

19) 150° $s = \frac{5\pi}{6}(14)$

$= 36.7$ cm

20) $\frac{3\pi}{11}(14)$

12.0 cm

For 21 & 22, find the area of each sector given its central angle θ and the radios of the circle. Found to the nearest tenth.

21) $\theta = \frac{5\pi}{12}$, r = 10

$A = \frac{1}{2}(10)^2\left(\frac{5\pi}{12}\right)$

$= 65.4$ units^2

22) θ =225°, r = 6

$A = \frac{1}{2}(36)\left(\frac{5\pi}{4}\right)$

$= 70.9$ units^2