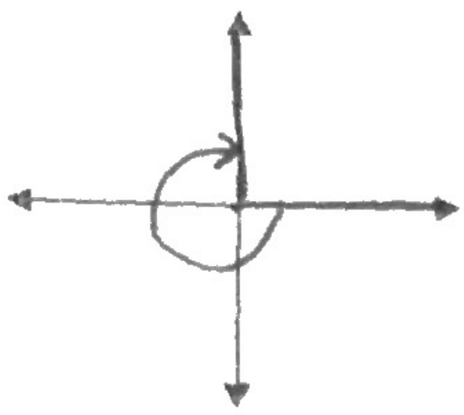
Pre-Calculus Worksheet Due: Sept. 14/15 Name: _____

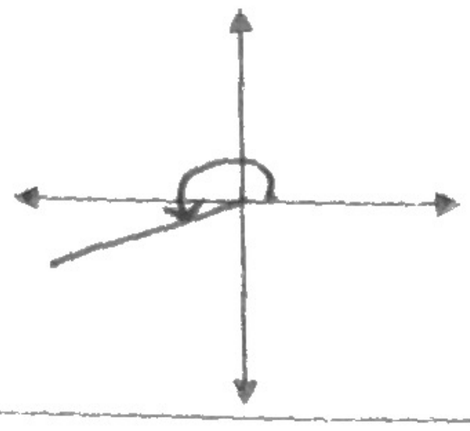
# 7 Angles in Trig Section 4.2 Period: ____

Find the degree measure of the angle for each rotation. Sketch each angle in standard position.

1. $\frac{3}{4}$ rotation clockwise

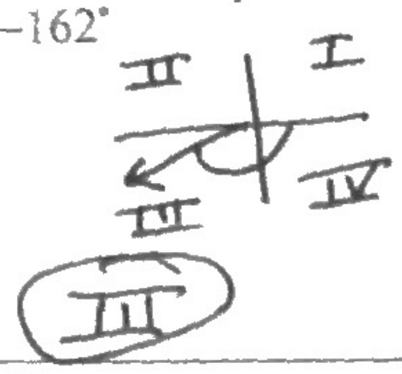


2. $\frac{10}{9}$ rotation counterclockwise

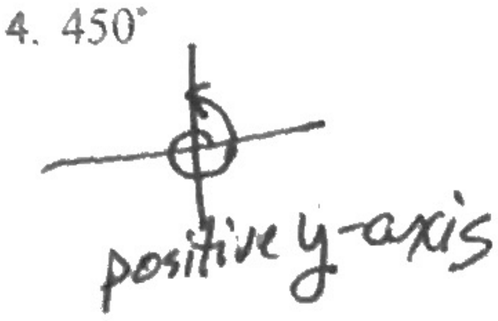


Find the quadrant or axis on which the terminal side of each angle lies. Sketch each angle

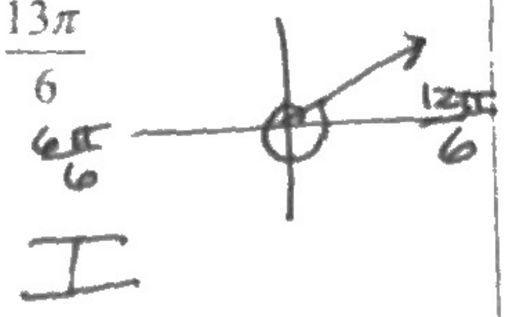
3. $-162^\circ$



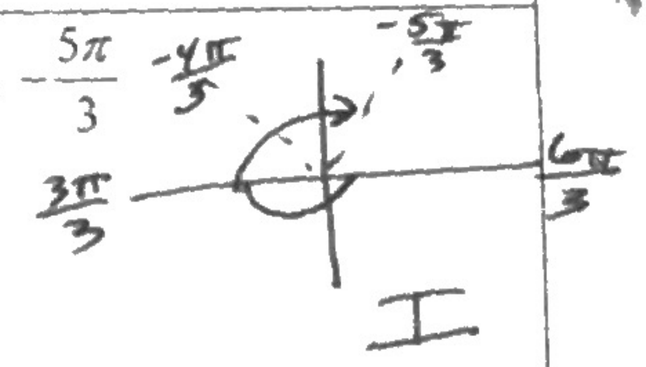

4. $450^\circ$




5. $\frac{13\pi}{6}$




6. $-\frac{5\pi}{3}$




Rewrite each angle in radian measure in fractional $\pi$ form. **No decimals**. SHOW YOUR WORK. In addition, determine the quadrant in which each angle terminates.

7. $315^\circ$

$\frac{180^\circ}{1\pi} = \frac{315^\circ}{x}$

$\frac{180x}{180} = \frac{315\pi}{180}$

$\boxed{x = \frac{7\pi}{4}}$

8. $120^\circ$

$\boxed{\frac{2\pi}{3}}$

9. $-20^\circ$

$\frac{180^\circ}{1\pi} = \frac{-20^\circ}{x}$

$\frac{-20\pi}{-180} = \frac{180x}{180}$

$\boxed{x = \frac{\pi}{9}}$

10. $-240^\circ$

$\boxed{\frac{-4\pi}{3}}$

Rewrite each angle in degree measure. SHOW YOUR WORK. In addition, determine the quadrant in which each angle terminates.

11. $\frac{3\pi}{2}$

$\frac{180^\circ}{1\pi} = \frac{x}{\frac{3\pi}{2}}$

$x\cancel{\pi} = (180)\left(\frac{3\cancel{\pi}}{2}\right)$

$\boxed{x = 270^\circ}$

12. $-\frac{7\pi}{6}$

$\boxed{x = -210^\circ}$

13. $\frac{7\pi}{3}$

$\frac{180^\circ}{1\pi} = \frac{x}{\frac{7\pi}{3}}$

$x\cancel{\pi} = (180)\left(\frac{\cancel{\pi}}{3}\right)$

$\boxed{x = 420^\circ}$

14. $-\frac{11\pi}{30}$

$\boxed{x = -66^\circ}$

Rewrite each angle as requested. **Round to three decimal places**. SHOW YOUR WORK.

15. $115^\circ$ in radians

$\frac{180^\circ}{1\pi} = \frac{115^\circ}{x}$

$\frac{180x}{180} = \frac{115\pi}{180}$

$\boxed{x = 2.007}$

16. $\frac{\pi}{7}$ in degrees

$\frac{180^\circ}{1\pi} = \frac{x}{\frac{\pi}{7}}$

$x\cancel{\pi} = (180)\left(\frac{\cancel{\pi}}{7}\right)$

$\boxed{x = 25.714^\circ}$

17. $-48.27^\circ$ in radians

$\boxed{x = -.842}$

18. $-2$ in degrees

$\boxed{x = 114.591^\circ}$

SHOW YOUR WORK. Calculator

Convert the angle measure to decimal degree form.

19. $85°18'30''$

Convert each angle measure to $D°M'S''$ form.

20. $-345.12°$

OMIT

Identify ALL angles that are conterminal with the given angle. Then find and draw one positive and one negative angle conterminal with the given angle. **DO NOT CONVERT BETWEEN RADIANS & DEGREES.**

21. $460°$

$\boxed{460° + 360N}$

$100°$, $-260°$

22. $-\frac{4\pi}{7}$

$\boxed{-\frac{4\pi}{7} + 2\pi N}$

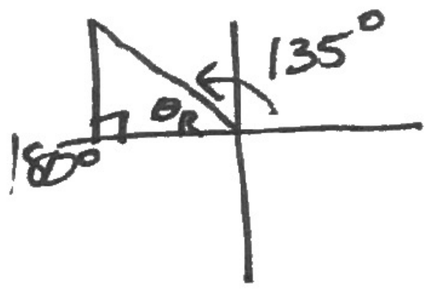
$-\frac{18\pi}{7}$, $\frac{10\pi}{7}$

23. $-168°$

24. $\frac{9\pi}{4}$

Sketch each angle, then find its REFERENCE ANGLE.

25. $135°$



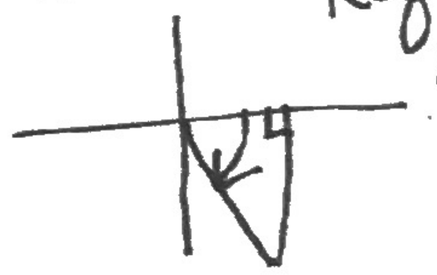

$\boxed{\theta_R = 45°}$

$180° - 135° = 45°$

26. $210°$

$\theta_R = 30°$

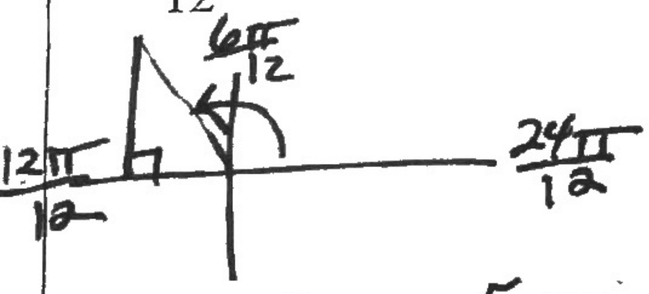
27. $-75°$



Ref. ∠'s are ALWAYS POSITIVE

$\theta_R = 75°$

28. $\frac{7\pi}{12}$



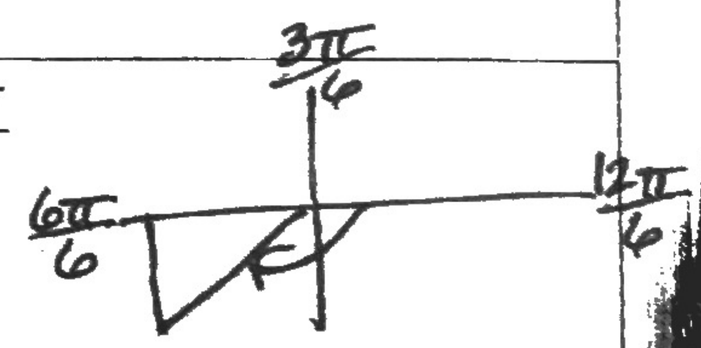

$\frac{12\pi}{12} - \frac{7\pi}{12} = \frac{5\pi}{12}$

$\boxed{\theta_R = \frac{5\pi}{12}}$

29. $\frac{11\pi}{3}$

$\boxed{\theta_R = \frac{\pi}{3}}$

30. $-\frac{5\pi}{6}$




$\frac{6\pi}{6} - \frac{5\pi}{6} = \frac{\pi}{6}$

$\boxed{\theta_R = \frac{\pi}{6}}$