Non-Calculator

1.4-1.6 Quiz Review (Quiz does NOT cover exact values!)

1. Convert $\frac{\pi}{10}$ from radians to degrees.

$\frac{\pi}{10} \cdot \frac{180}{\pi} = \boxed{18°}$

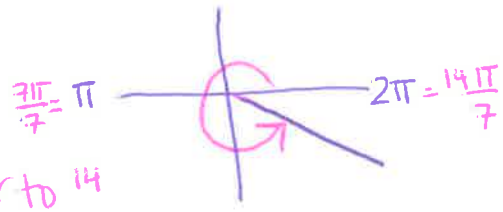
2. Convert 450° from degrees to radians.

$\frac{450}{90} \cdot \frac{\pi}{\frac{180}{90}} = \boxed{\frac{5\pi}{2}}$

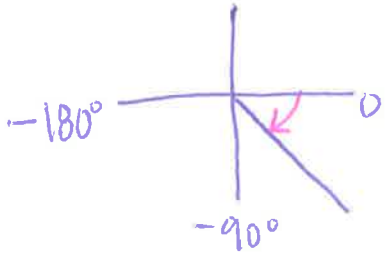
Sketch the angle on a coordinate plane.

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

closer to 14



4. -65°



Name a coterminal angle of the given angle.

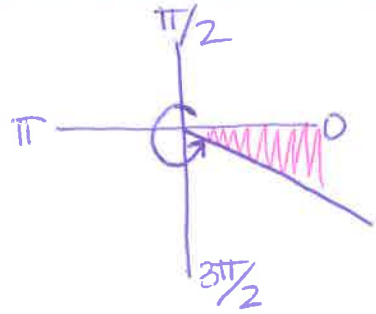
$\pm 2\pi$ OR 360

5. $-\frac{5\pi}{3} + \frac{6\pi}{3} = \boxed{+\frac{\pi}{3}}$

6. 45° + 360 = $\boxed{405°}$

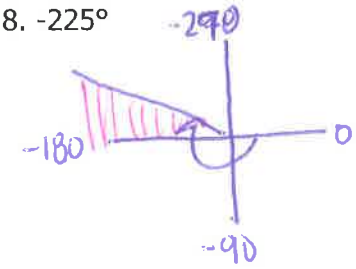
Name the reference angle of the given angle. (Always positive)

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



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

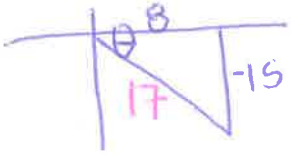
8. -225°



$225 - 180 = 45$

$\boxed{45°}$

9. If the terminal side of angle θ passes thru the point (8, -15), what is the value of tanθ?



$\tan\theta = \frac{O}{A}$ OOPS $\boxed{\frac{-15}{8}}$

10. Determine the angular velocity in radians per second of a wheel turning at 350 rotations per minute

$w = \frac{\theta}{t} = \frac{2\pi \cdot 350}{1\,min} \Rightarrow \frac{700\pi \text{ radians}}{1\,min} \cdot \frac{1\,min}{60\,sec} \approx \boxed{36.652 \text{ rad/sec}}$

* ones on quiz can be left w/ π.

11. A ferris wheel with a *diameter* of 220 ft takes 42 seconds to rotate once.

a) Determine the angular velocity in radians per second of the ferris wheel. $\boxed{\pi/21 \text{ rad per sec} \approx .15}$

b) Determine the linear velocity in feet per second of the ferris wheel.

r = 110 ft

a) $w = \frac{\theta}{t} = \frac{2\pi}{42}$

b) $v = w \cdot r = \frac{\pi}{21} \cdot 110 = \boxed{16.456 \text{ ft/sec}}$