Determine the quadrant (I, II, III, or IV) in which the terminal side of the given angle lies.

1. $-135°$	III
2. $\frac{5\pi}{6}$	II

Convert the angle from degrees to radians.

3. $135°$	$3\pi/4$
4. $300°$	$5\pi/3$

Convert the angle from radians to degrees.

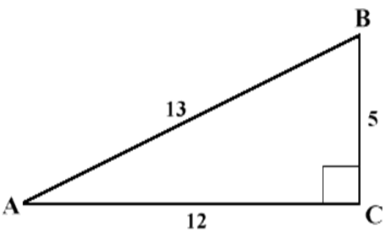
5. $\frac{4\pi}{3}$	$240°$
6. $\frac{5\pi}{6}$	$150°$

Match the term on the left to the corresponding unit(s) listed below that could be used to describe it:
~~centimeters~~, years , radians , ~~feet/second~~ , ~~revolutions/minute~~ , degrees , rotations , miles

7. angular speed	rev/min
8. arc length	cm; mi;
9. linear speed	ft/s

In the given 5-12-13 triangle, determine the given trigonometric functions of acute angles A and B.

10. $\sin B =$	$12/13$	13. $\sec A =$	$13/12$
11. $\cos B =$	$5/13$	14. $\csc A =$	$13/5$
12. $\tan B =$	$12/5$	15. $\cot A =$	$12/5$



Given that $s = r\theta$, $v = \frac{s}{t}$, $\omega = \frac{\theta}{t}$, $v = r\omega$, $5280\ ft = 1mi$

What is the linear speed, in miles per hour, of a car whose 20-inch diameter wheels spin at a rate of 528 revolutions per minute? Circle/box your exact, simplified final answer, including units.

$V = ?\ mi/h$; $r = 10\ in$; $\omega = 528\ rev/min$

$V = r\omega$

$= \frac{\cancel{10}\ \cancel{in}}{1} \cdot \frac{\cancel{528}\ \cancel{rev}}{\cancel{min}} \cdot \frac{1\ \cancel{ft}}{\cancel{12}\ \cancel{in}} \cdot \frac{1\ mi}{\cancel{5280}\ \cancel{ft}} \cdot \frac{\overset{5}{\cancel{60}}\ \cancel{min}}{1\ h} \cdot \frac{2\pi}{1\ \cancel{rev}}$

$= \boxed{10\pi\ mi/h}$

1. Rearrange to solve for x.

$a^2 = b^2 + c^2 - 2bcx$

$\frac{2bcx}{2bc} = \frac{b^2 + c^2 - a^2}{2bc}$

$x = \boxed{\frac{b^2 + c^2 - a^2}{2bc}}$

2. Rearrange to solve for x.

$a(x + 10) = bx$

$ax + 10a = bx$

$10a = bx - ax$

$10a = x(b - a)$

$\boxed{\frac{10a}{b-a}} = x$

3. Solve for x.

$(x - 3)(2x + 1)(x + 5) = 0$

$x = 3;\ -\frac{1}{2};\ -5$

4. Solve for x.

$x^2 = 9$

$x = \boxed{\pm 3}$

If $[f(x)]^2 = A$ then $f(x) = \pm\sqrt{A}$

5. Factor completely.

$2x^2 - 4x + 3xy - 6y$

$2x(x-2) + 3y(x-2)$

$\boxed{(x-2)(2x+3y)}$

6. Factor completely.

$2x^2 - 3x - 2$

$2x^2 - 4x + x - 2$

$2x(x-2) + 1(x-2)$

$\boxed{(x-2)(2x+1)}$

7. Simplify.

$$\frac{x^2+x-6}{x^2-x} \cdot \frac{x^2-1}{x^2-x-2} = \frac{(x+3)\cancel{(x-2)}}{x\cancel{(x-1)}} \cdot \frac{\cancel{(x-1)}\cancel{(x+1)}}{\cancel{(x-2)}\cancel{(x+1)}}$$

$$= \boxed{\frac{x+3}{x}}$$

8. Rationalize the denominator.

$$\frac{2}{1-\sqrt{3}} \cdot \frac{1+\sqrt{3}}{1+\sqrt{3}} = \frac{2+2\sqrt{3}}{1-3} = \frac{2+2\sqrt{3}}{-2} = \frac{\cancel{-2}(-1-\sqrt{3})}{\cancel{-2}} = \boxed{-1-\sqrt{3}}$$

9. Simplify by writing as a single fraction with rationalized denominator.

$$\frac{1}{\sqrt{2}} - \frac{1}{2} \div \frac{1}{\sqrt{3}} = \frac{1}{\sqrt{2}} - \frac{1}{2} \cdot \frac{\sqrt{3}}{1} = \frac{1}{\sqrt{2}} - \frac{\sqrt{3}}{2} = \frac{\sqrt{2}}{2} - \frac{\sqrt{3}}{2} = \boxed{\frac{\sqrt{2}-\sqrt{3}}{2}}$$

10. Describe in words how to obtain the graph of $f(x) = |x-3| + 1$ from the graph of $f(x) = |x|$.

right 3

up 1

11. Given the following function $f(x)$, find the formula for its inverse, $f^{-1}(x)$.

$f(x) = 2x - 1$

$y = 2x - 1$

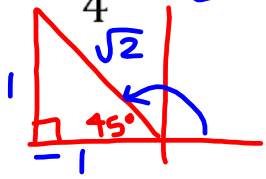
$x = 2y - 1$

$x + 1 = 2y$

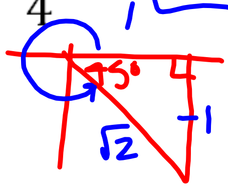
$\frac{x+1}{2} = y$

$$\boxed{f^{-1}(x) = \frac{x+1}{2}}$$

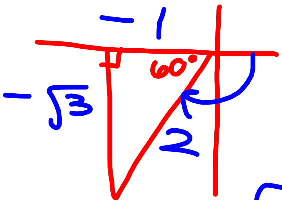
$$\cot\frac{3\pi}{4} = \boxed{-1}$$



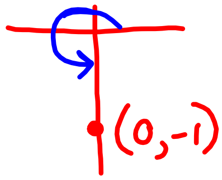
$$\sec\frac{7\pi}{4} = \boxed{\sqrt{2}}$$



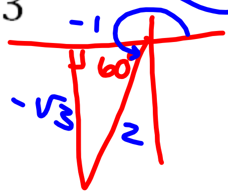
$$\csc\left(-\frac{2\pi}{3}\right) = \boxed{-\frac{2}{\sqrt{3}}}$$



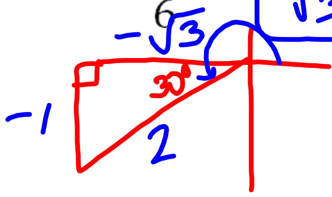
$$\csc\frac{3\pi}{2} = \frac{1}{\sin\frac{3\pi}{2}} = \frac{1}{-1} = \boxed{-1}$$



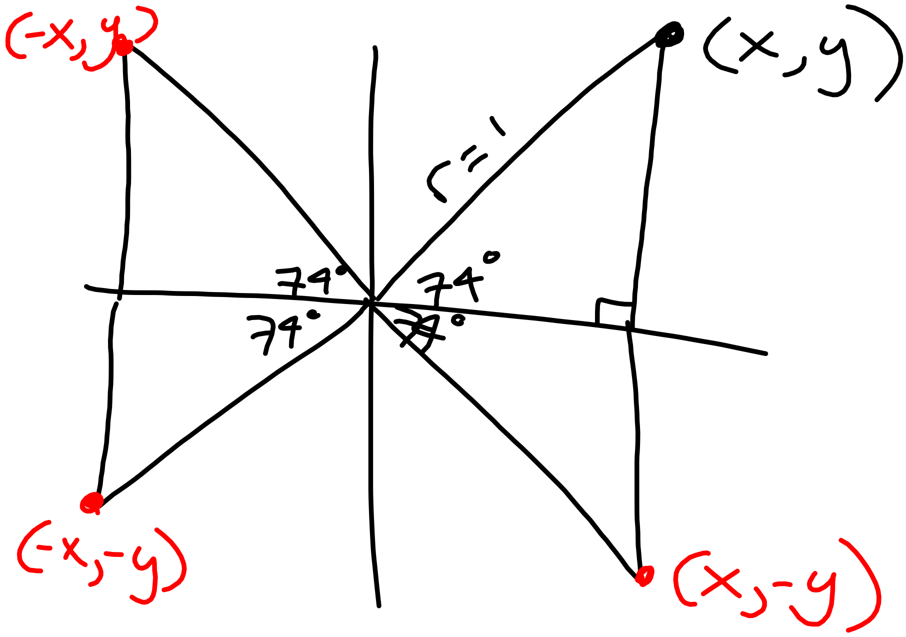
$$\sin\frac{4\pi}{3} = \boxed{-\frac{\sqrt{3}}{2}}$$



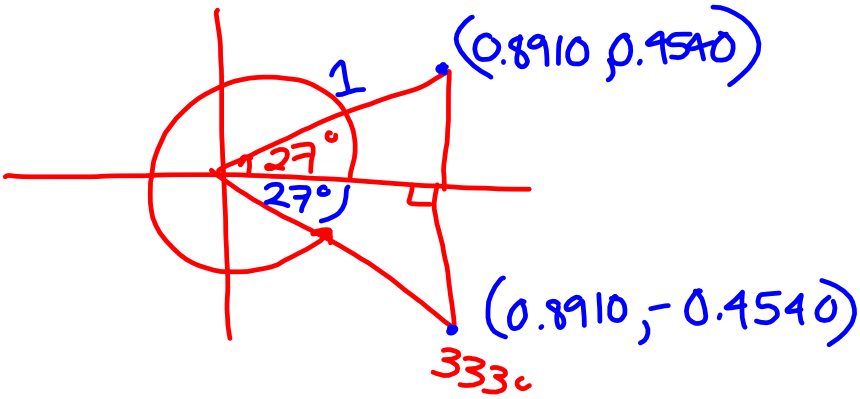
$$\tan\frac{7\pi}{6} = \boxed{\frac{1}{\sqrt{3}}}$$



Angles with the same reference angles have the same trig function values.



80. Given that $\sin 27° \approx 0.4540$, $\cos 27° \approx 0.8910$, and $\tan 27° \approx 0.5095$, find the trigonometric function values for 333°.



$\sin 333° = -\sin 27° = -0.4540$

$\cos 333° = \cos 27° = 0.8910$

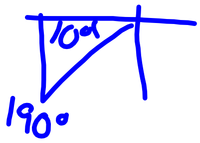
$\tan 333° = -\tan 27° = -0.5095$

Rewrite the following in terms of $\sin 10°$ and/or $\cos 10°$.

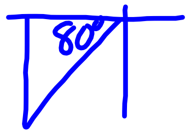
$\tan 10° = \boxed{\dfrac{\sin 10°}{\cos 10°}}$

$\cos 80° = \boxed{\sin 10°}$

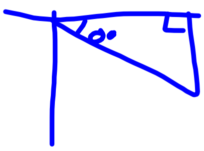
$\sec 190° = -\sec 10° = \boxed{\dfrac{-1}{\cos 10°}}$



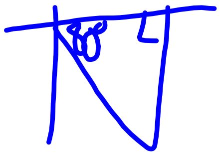
$\sin 260° = -\sin 80° = \boxed{-\cos 10°}$



$\csc 350° = -\csc 10° = \boxed{\dfrac{-1}{\sin 10°}}$



$\cot 280° = -\cot 80° = -\tan 10° = \boxed{\dfrac{-\sin 10°}{\cos 10°}}$



Homework:

Due Friday:

- 5.2 #35-41odd; 59-75odd
- 5.3 #1-35odd; 37-48all; 61-68all
- **New: 5.4 #1-22 all; 33-67odd; 71-97odd**

Test #1 - Wednesday, 11/20

Quiz #3 - This Friday