

3.2
4.6690 ≈ 0.7071075

$\sin(45^\circ) = .7071067812$

$c \approx 4.66690$

$a \approx 3.3$ $b \approx 3.3$

$c^2 = a^2 + b^2$ $(\sqrt{c})^2 = c$

$\sqrt{c^2} = \sqrt{a^2 + b^2}$ $c = \sqrt{(3.3)^2 + (3.3)^2}$

$|c| = \sqrt{a^2 + b^2} = \sqrt{2(3.3)^2}$

$c = \pm \sqrt{2(3.3)^2}$

$\sqrt{2^2} = 3$ c 's a length, so take the positive root

$\sqrt{(-3)^2} = 3$

$|3| = 3$

$|-3| = 3$

$c = \sqrt{2^2 + b^2}$

Jan 19-8:11 AM

$\sin \theta = \frac{\text{opposite}}{\text{hypotenuse}} = \frac{y}{r}$

$\cos \theta = \frac{\text{adjacent}}{\text{hypotenuse}} = \frac{x}{r}$

$\tan \theta = \frac{\text{opposite}}{\text{adjacent}} = \frac{y}{x} (= \text{slope})$

Sohcahtoa

How to draw triangles for this class.

Always do crosshairs. The initial point for r is always the origin. The opposite side is always a perpendicular to the x -axis.

Some old hippy caught a high tripping on acid.

Jan 19-8:41 AM

Summative - Grade
Formative - Learning

Pre-Test grade is attendance grade, but you'll know what I'm looking for.

Draw a ray with an angle of 225°
 $= 180^\circ + 45^\circ$

45° is the "reference angle."

Reference triangle for $\theta = 225^\circ$

Jan 19-8:51 AM

66. Angular Speed A car is moving at a constant 60 miles per hour, and the diameter of its wheels is 2 ft.

(a) Find the number of revolutions per minute the wheels are rotating.

(b) Find the angular speed of the wheels in radians per minute.

$r = 1$ ft

arc length = $r\theta$

$\frac{\text{arc length}}{\text{unit time}} = \frac{r\theta}{\text{sec}}$

$\frac{60 \text{ mi}}{\text{hr}} \approx \frac{88 \text{ ft}}{\text{sec}}$

$\frac{65 \text{ ft}}{\text{hr}} \cdot \frac{88 \text{ ft}}{\text{sec}} \cdot \frac{1 \text{ hr}}{60 \text{ min}} = \frac{(65)(88)}{60} \frac{\text{ft}}{\text{sec}}$

$\frac{65}{60} = \frac{(65)(88)}{60} \frac{\text{ft}}{\text{sec}} \left(\frac{60 \text{ sec}}{1 \text{ min}} \right) = (65)(88) \frac{\text{ft}}{\text{min}}$

$\frac{5720 \text{ ft}}{2\pi \text{ ft}} = \text{linear speed}$

$\left(\frac{1 \text{ revolution}}{2\pi \text{ radians}} \right) \left(\frac{2\pi \text{ ft}}{1 \text{ revolution}} \right)$

$\left(\frac{5720 \text{ ft}}{2\pi} \right) \left(\frac{1 \text{ rev}}{2\pi \text{ ft}} \right) = \frac{5720 \text{ rev}}{4\pi} \frac{\text{ft}}{\text{min}}$

rad/min gen m.m.:

$\left(\frac{5720}{2\pi} \right) \left(\frac{2\pi}{\text{min}} \right) \left(\frac{20 \text{ rad/ft}}{1 \text{ rev}} \right)$

$= 5720 \text{ rad/min}$

Jan 19-8:57 AM