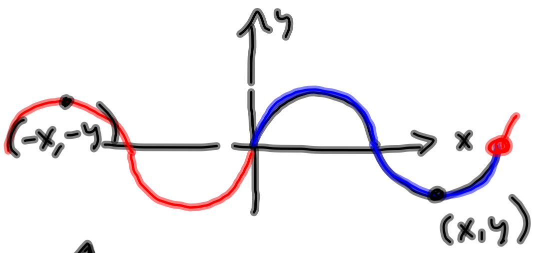
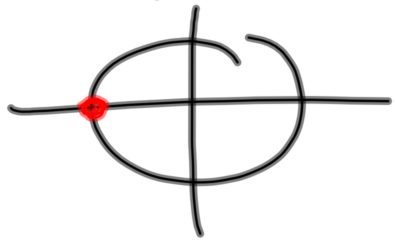
sine is odd



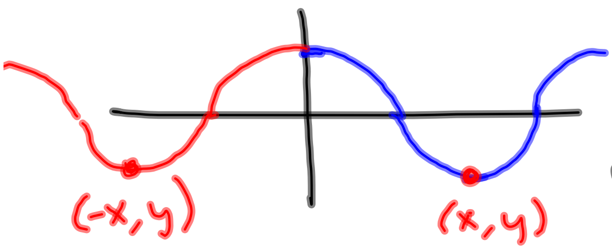
$y = \sin(x)$

$\sin(-x) = -y$

$(x,y) = (r\cos\theta, r\sin\theta)$



cosine is even

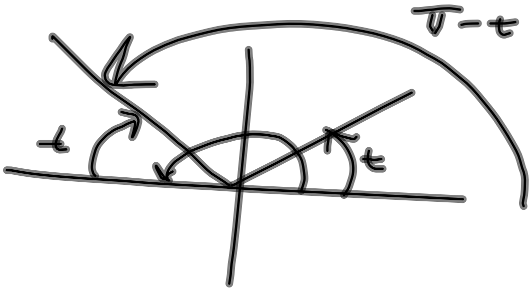


$y = \cos(x)$

$\cos(-x) = y$

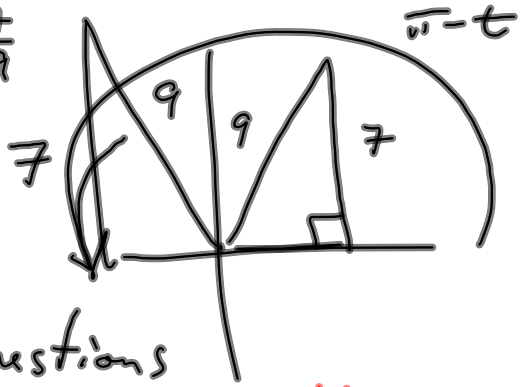
$\sin(t) = \frac{4}{5} \Longrightarrow \sin(-t) = -\frac{4}{5}$

$\cos(t) = -\frac{4}{5} \Longrightarrow \cos(-t) = -\frac{4}{5}$



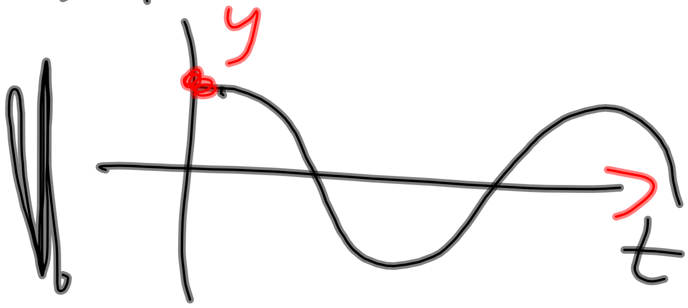
$\sin(t) = \frac{7}{9}$

$\sin(\pi - t) =$



Other 1.2 questions

$y = \frac{1}{4}\cos(6t)$



See Hooke's Law

§1.3 Table, page 141 is it, but for quadrant angles.

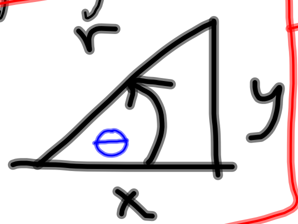
Memorize these or just LEARN that handout I gave.

Trig identities:

Reciprocals: $\csc\theta = \frac{1}{\sin\theta}$, etc

__Quotient__: $\tan\theta = \frac{y}{x} = \frac{\frac{y}{r}}{\frac{x}{r}} = \frac{\sin\theta}{\cos\theta}$

Pythagorean identities.



ALL from this

$$\boxed{x^2 + y^2 = r^2}$$

$$(r\cos\theta)^2 + (r\sin\theta)^2 = r^2$$

$$r^2\cos^2\theta + r^2\sin^2\theta = r^2$$

$$\boxed{\cos^2\theta + \sin^2\theta = 1}$$

$$\sin\theta = \frac{y}{r} \Rightarrow r\sin\theta = y$$

$$\boxed{\tan^2\theta + 1 = \sec^2\theta}$$

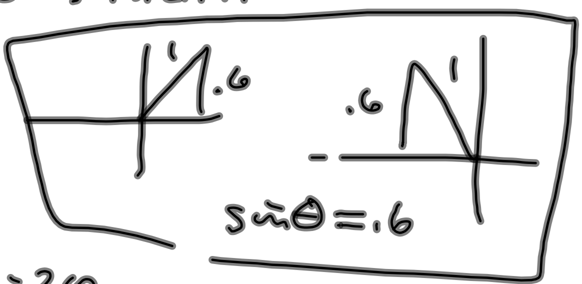
$$\frac{\sin^2\theta}{\cos^2\theta} + \frac{\cos^2\theta}{\cos^2\theta} = \frac{\sin^2\theta + \cos^2\theta}{\cos^2\theta} = \frac{1}{\cos^2\theta} = \sec^2\theta$$

$$\boxed{\cot^2\theta + 1 = \csc^2\theta}$$

$\boxed{E5}$ Use Pythag. Id. to find...

Given $\sin\theta = 0.6$

Find $\cos\theta$



$$\cos^2\theta + \sin^2\theta = 1$$

$$\cos^2\theta = 1 - \sin^2\theta$$

$$= 1 - 0.6^2$$

$$= 1 - .36$$

$$= .64$$

$$\sqrt{\cos^2\theta} = |\cos\theta| = \sqrt{.64}$$

θ is <u>acute</u>

$$\Rightarrow \quad \cos\theta = \pm\sqrt{.64}$$

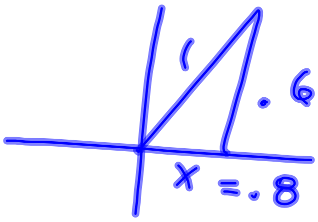
$$= \pm .8$$

Need more info for unique answer.

The way I'd solve, if they didn't <u>make</u> me use an identity.

θ is acute $\Rightarrow$ QI

$\sin\theta = 0.6 \longrightarrow$



$\sqrt{x^2} = |x|$

$= x$ if $x \geq 0$, which it IS.

$x = \sqrt{r^2 - y^2}$

$x^2 + y^2 = 1^2$

$x^2 + .6^2 = 1$

$x^2 = 1 - .36$

$x^2 = .64$

$x = \pm\sqrt{.64}$

$x = \pm .8$

$x = .8$ (QI)

$x = \sqrt{1 - .6^2}$

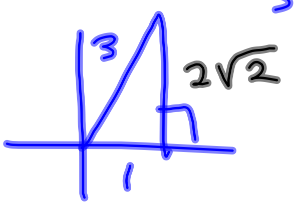
$= \sqrt{1 - .36}$

$= \sqrt{.64}$

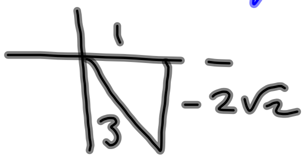
$= .8$

$\sqrt{} \geq 0$

43 $\cos\theta = \frac{1}{3}$



Seems poorly posed.
You have to ASSUME
θ is acute ($0 \le \theta < \frac{\pi}{2}$)
to find unique answers, here.



is other pic. for $\cos\theta = \frac{1}{3}$

$x^2 + y^2 = r^2$

$1^2 + y^2 = 3^2$

$y^2 = 9 - 1$

$y = \sqrt{8}$

$y = 2\sqrt{2}$

Take positive, because you (foolishly) assumed θ is acute.

$\boxed{\text{G11}}$

S1.3 #s 1–5, 7–37, 41–51, 57–65, 67?, 73, 75