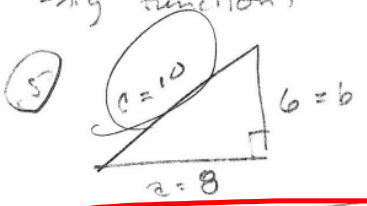
#s 5-10 Find the exact value of the 6 trig functions

(5)



$c^2 = a^2 + b^2 = 8^2 + 6^2$

$= 64 + 36 = 100$

$\Rightarrow c = \sqrt{100}$

$10 = c$

5 pts

$\sin\theta = \frac{6}{10} = \frac{3}{5}$ $\quad \csc\theta = \frac{5}{3}$

$\cos\theta = \frac{8}{10} = \frac{4}{5}$ $\quad \sec\theta = \frac{5}{4}$

$\tan\theta = \frac{6}{8} = \frac{3}{4}$ $\quad \cot\theta = \frac{4}{3}$

5 pts

sin w/o its argument is just a sin.

Fracs in lowest terms (Rationalizing denominators is not necessary)

$\frac{1}{\sqrt{2}}$ is cool.

$\frac{\sqrt{2}}{2}$ is better for Gilligan's Isle.

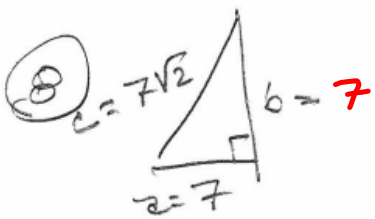
$(a+b)^c = a^c + b^c$ No! BAD!

$\sqrt{16+9} = 4+3$?!

$c(a+b) = ac + bc$

$(a+b)c = ac + bc$

$(ab)^c = a^c b^c$



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

$= (7\sqrt{2})^2 - 7^2$

$= 49 \cdot 2 - 49 = 49$

$\Rightarrow b = \sqrt{49}$ $\quad 7 = b$

5 pts

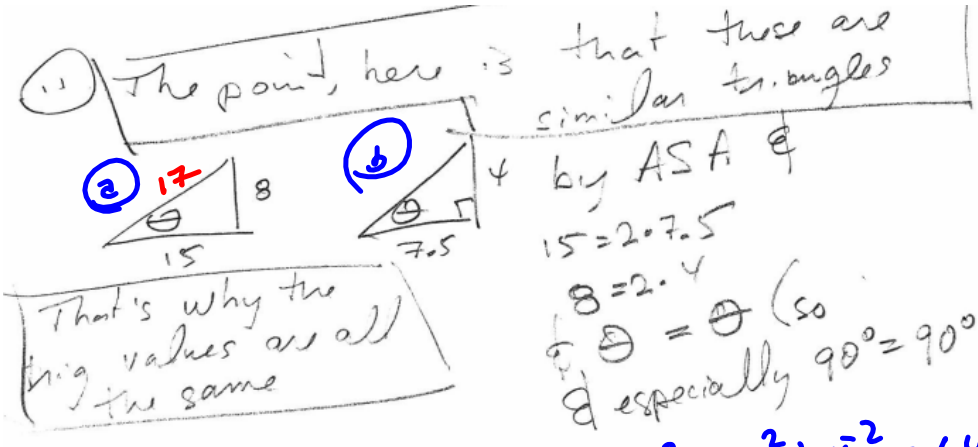
is similar triangle.

$\sin\theta = \frac{7}{7\sqrt{2}} = \frac{1}{\sqrt{2}}$ $\quad \csc\theta = \sqrt{2}$

$\cos\theta = \frac{7}{7\sqrt{2}} = \frac{1}{\sqrt{2}}$ $\quad \sec\theta = \sqrt{2}$

$\tan\theta = \frac{7}{7} = 1$ $\quad \cot\theta = 1$

5 pts.



$\sin\theta =$

$c^2 = 8^2 + 15^2 = 64 + 225$

$= 289$

$\Rightarrow c = \pm\sqrt{289}$, but all is positive here

$\Rightarrow c = 17$

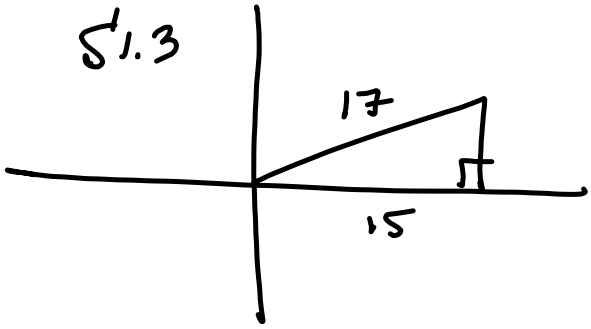
$\sin\theta = \frac{8}{17}$ $\csc\theta =$ etc.

$\cos\theta = \frac{15}{17}$

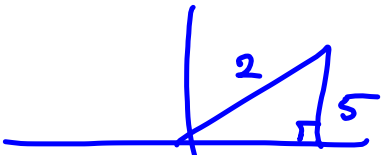
$\tan\theta = \frac{8}{15}$

$\cos\theta = \frac{15}{17}$

S1.3

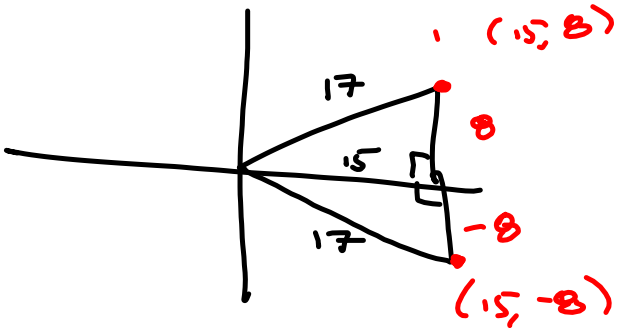


$\sin\theta = -\frac{5}{2}$



Neuah!

S1.4



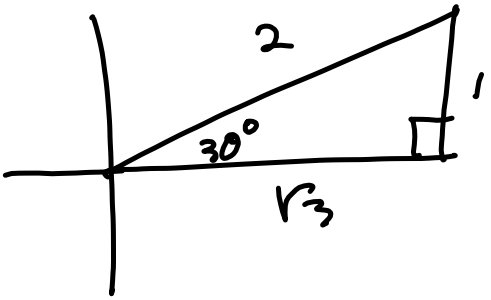
```
      .3420201433
1/cos(42+12/60)
      1.349883633
cos(42+12/60)
      .7408045963
1/Ans
      1.349883633
```

handling
sec(42° 12')

NOT $\cos^{-1}$ key is

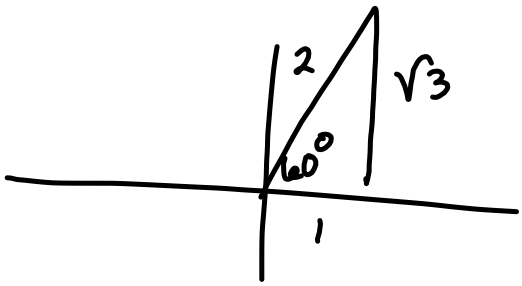
NOT $\frac{1}{\cos\theta}$. Instead,

$\cos^{-1}$ is the angle corresponding to a given value of cosine



$\sin 30° = \frac{1}{2}$

$\cos 60° = \frac{1}{2}$

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cos⁻¹(1/2)
                60
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Solve $\sin\theta = -.732$

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sin⁻¹(-.732)
     -47.05432419
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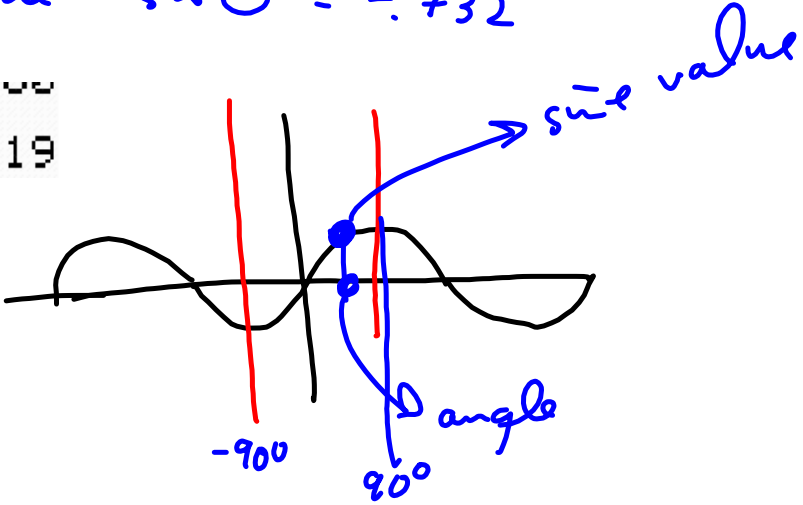
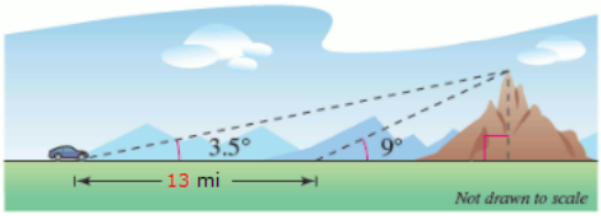
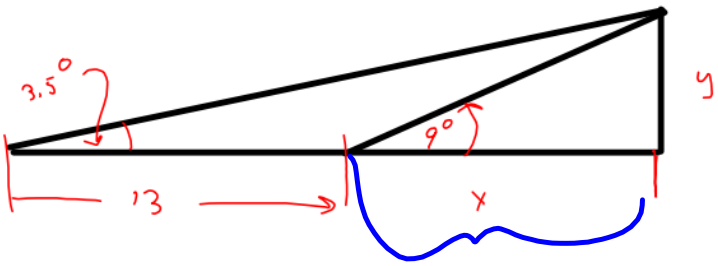




This is pretty cool.
Mostly just being clever with algebra.



$a = \tan 3.5^\circ$
$b = \tan 9^\circ$

$\frac{y}{x+13} = \tan 3.5^\circ$ $\qquad$ $\frac{y}{x} = \tan 9^\circ$

$y = a(x+3)$ $\qquad$ $y = bx$

$y = y$

$a(x+3) = bx$

$ax + 3a = bx$

$-bx \quad -3a = -bx \quad -3a$

$ax - bx = -3a$

$x(a-b) = -3a$

$x = \frac{-3a}{a-b} = \frac{-3\tan(3.5^\circ)}{\tan(3.5^\circ) - \tan(9^\circ)}$

$\approx$