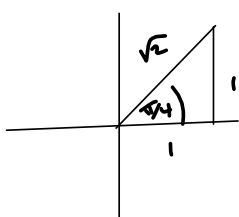


S1.7#22

Evaluate $\arcsin\left(\sin\left(\frac{9\pi}{4}\right)\right) = \arcsin\left(\frac{\sqrt{2}}{2}\right) = \frac{\pi}{4}$



```

√(1006/π)-√(1000
/π)
.0534436779
sin(9π/4)
.7071067812
sin-1(Ans)
.7853981634

```

radians

$$\left(.78\dots \text{ radians}\right) \left(\frac{\pi}{\pi}\right) = \frac{.78\dots \pi}{\pi}$$

$$\theta = .78\dots = ?\pi \approx$$

$$\frac{.78\dots}{\pi} = ? = .25 = \frac{1}{4}, \text{ so } \theta = \frac{\pi}{4}$$

Instead, use degrees & convert to π radians!

```

sin-1(Ans) .7071067812
Ans*π/180 45
Ans/π .7853981634
Ans/π .25

```

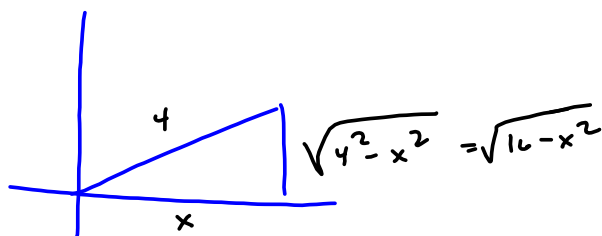
degrees

decimal Radians

$$\pi \text{ radians} = \frac{1}{4}\pi = \frac{\pi}{4}$$

1.7 #33

$$\tan(\arccos(\frac{x}{4})) = \frac{\sqrt{16-x^2}}{x}$$



You always feel stupid if you're doing math right. First, you're stupid because you don't get it. Then when you get it, you'll feel stupid because it took you so long.

$$\sqrt{16 - x^2}$$

$$\{x \mid a \leq x \leq b\} = [a, b]$$

$$\{x \mid a < x < b\} = (a, b)$$

$$\{x \mid a \leq x < b\} = [a, b)$$

S1.8 towards the end

#22
 $f(t) = 2 \sin(\omega t)$ is our vibration function.

$$\text{Frequency} = 288 \frac{\text{cycles}}{\text{sec}} \Rightarrow$$

$$\text{Period} \Rightarrow \frac{1}{288} \text{ sec} = \frac{1}{288} \text{ sec}$$

vibration

$$\omega t = 2\pi, \text{ when } t = \frac{1}{288} \Rightarrow$$

$$\Rightarrow \frac{1}{288} \omega = 2\pi$$

$$\omega = \frac{2\pi}{\frac{1}{288}} = \frac{288}{1} \cdot 2\pi = 576\pi$$

$$\text{So } f(t) = 2 \sin(576\pi t)$$

$\gg \gg$ so super fast.

$$\tan(\arccos(\frac{x}{4}))$$

add multiples

of $\frac{\pi}{2}$

Asymptotes when $\arccos(\frac{x}{4}) = \frac{(2n+1)\pi}{2}$

for S1.7 #33!

$$\arccos(\frac{x}{4}) = \pm \frac{\pi}{2}, \pm \frac{3\pi}{2}, \pm \frac{5\pi}{2}, \dots$$

$$\cos(2\arccos(\frac{x}{4})) = \frac{x}{4} = \cos(\frac{\pi}{2}) = 0$$

$$\Rightarrow x = 0$$