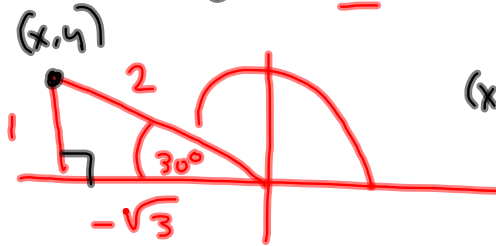


S1.2 $\frac{8+2}{10}$ 2 was for "context"

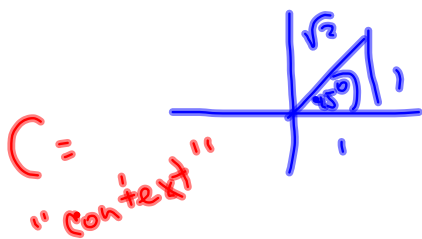
#59-12 find the point on the unit circle corresponding to t .

#11 $t = \frac{5\pi}{6} = 150^\circ$ might be easier to "see"



$$\begin{aligned} (x, y) &= (r \cos \theta, r \sin \theta) \\ &= (1 \cos \theta, 1 \sin \theta) \\ &= \left(-\frac{\sqrt{3}}{2}, \frac{1}{2}\right) \end{aligned}$$

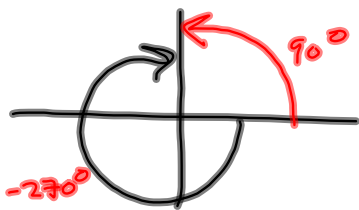
#13 $t = \frac{\pi}{4} = 45^\circ$



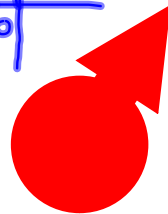
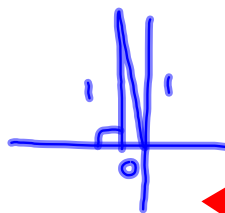
"context"

$$\begin{aligned} (x, y) &= \left(\frac{1}{\sqrt{2}}, \frac{1}{\sqrt{2}}\right) * \\ &= \left(\frac{\sqrt{2}}{2}, \frac{\sqrt{2}}{2}\right) \end{aligned}$$

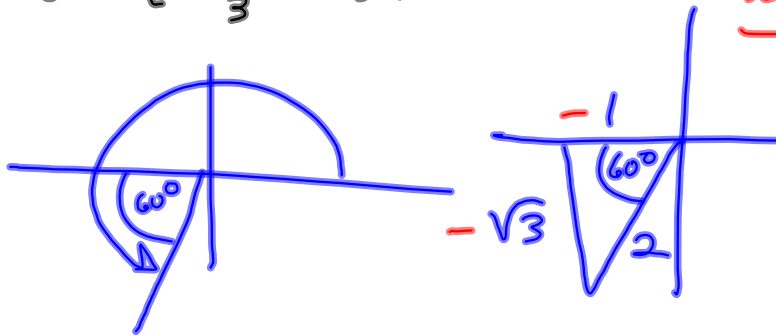
#21 $t = -\frac{3\pi}{2} = -270^\circ$



$$\begin{aligned} \Rightarrow \sin t &= 1 \\ \cos t &= 0 \\ \tan t & \text{ is undefined} \end{aligned}$$



#25 $t = \frac{4\pi}{3} = 240^\circ$



soh-cah-toa
 ↓
 mnemonic

$\sin t = -\frac{\sqrt{3}}{2}$

$\cos t = -\frac{1}{2}$

$\tan t = \sqrt{3}$

$\csc t = -\frac{2}{\sqrt{3}} = -\frac{2\sqrt{3}}{3}$

$\sec t = -2$

$\cot t = \frac{1}{\sqrt{3}} = \frac{\sqrt{3}}{3}$

(35) $\sin\left(\frac{19\pi}{6}\right)$

$\frac{19 \cdot \pi}{6} \cdot \frac{180}{\pi}$

convert to degrees

570

$\frac{\%}{360}$

find how many rotations

$\frac{19}{12}$

evalf(%)

1.583333333

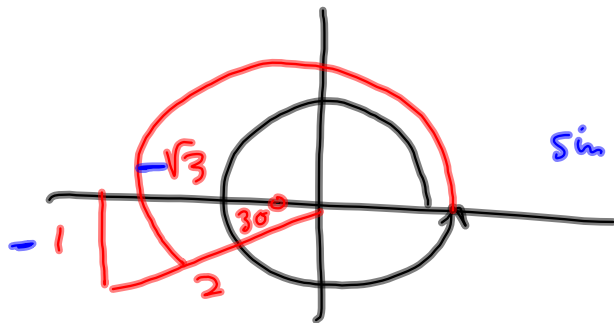
there's 1

The .583 is the fractional part / remainder of a rotation.

$\frac{7}{12} \cdot 360$

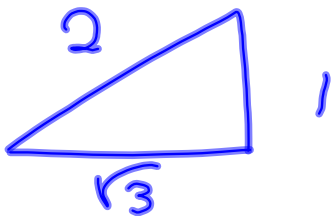
$\left(\frac{7}{12} \text{ rotation}\right) \left(\frac{360^\circ}{1 \text{ rotation}}\right) = 210^\circ$





$$\sin\left(\frac{19\pi}{6}\right) = \sin\left(\frac{12\pi}{6} + \frac{7\pi}{6}\right) = \sin\left(\frac{7\pi}{6}\right)$$

3, 4, 5



- 1, 2, sqrt(3)
- 1, 1, sqrt(2)
- 0, 1, 1



$$\tan\left(\frac{\pi}{3}\right) \approx 1.7321$$

49



(b) .0176843004 f

(c) -.2474981242

§ 1.3

$$\theta \in [0^\circ, 360^\circ], \theta \in [0, 2\pi]$$

func

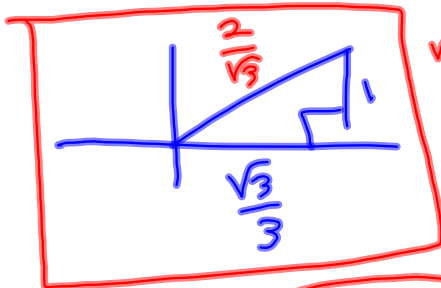
θ°

θ rad

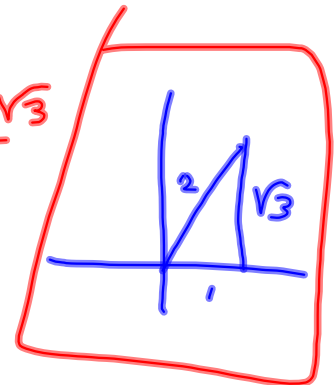
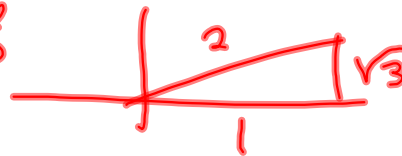
func. val

cot

$$\frac{\sqrt{3}}{3}$$

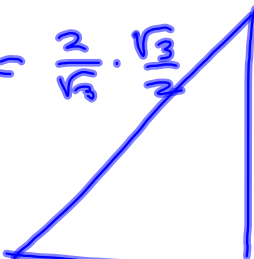


$\sqrt{3}$ times all



$$\sqrt{1^2 + \frac{3}{9}} = \sqrt{1 + \frac{1}{3}} = \frac{2}{\sqrt{3}}$$

unit circle might clarify:

$$1 = \frac{2}{\sqrt{3}} \cdot \frac{\sqrt{3}}{2}$$


$$1 \cdot \frac{\sqrt{3}}{2} = \frac{\sqrt{3}}{2}$$

$$\frac{\sqrt{3}}{3} \cdot \frac{\sqrt{3}}{2} = \frac{3}{3 \cdot 2} = \frac{1}{2}$$



Times 2 :

