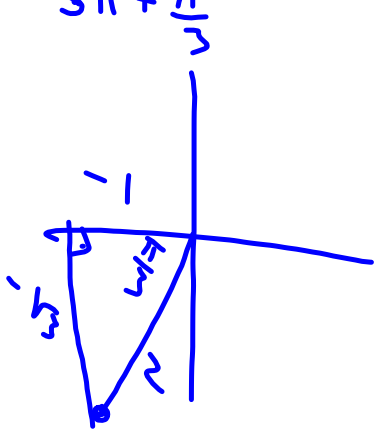
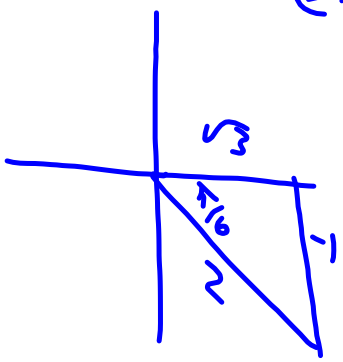
Evaluate without the use of a calculator:

$$\cos\left(\frac{16\pi}{3}\right)\tan^2\left(\frac{23\pi}{6}\right)+\csc\left(\frac{11\pi}{2}\right)+\sin^2\left(\frac{27\pi}{4}\right)$$

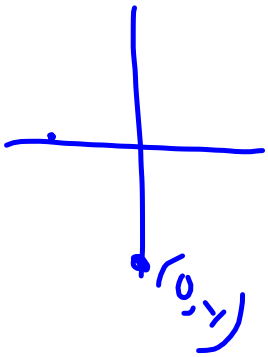
$\frac{16\pi}{3}$ $\frac{15\pi}{3}+\frac{\pi}{3}$ $5\pi+\frac{\pi}{3}$



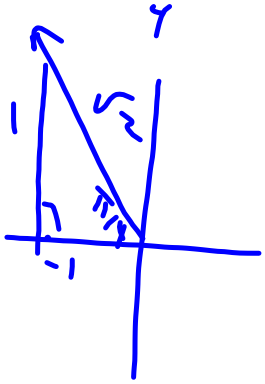

$\frac{23\pi}{6}$ $4\pi$ $\frac{24\pi}{6}-\frac{\pi}{6}$




$\frac{11\pi}{2}$ $\frac{10\pi}{2}+\frac{\pi}{2}$ $5\pi$




$\frac{27\pi}{4}$ $\frac{28\pi}{4}-\frac{\pi}{4}$ $7\pi-\frac{\pi}{4}$




$$=\left(\frac{-1}{2}\right)\left(\frac{-1}{\sqrt{3}}\right)^2+(-1)+\left(\frac{1}{\sqrt{2}}\right)^2$$

$$=-\frac{1}{2}\left(\frac{1}{3}\right)+-1+\frac{1}{2}$$

$$=-\frac{1}{6}+\frac{-1}{1}+\frac{1}{2}$$

$$=\frac{-1-6+3}{6}$$

$$=-\frac{4}{6}$$

$$=-\frac{2}{3}$$

Rationalizing

$$\frac{3}{\sqrt{6}}\left(\frac{\sqrt{6}}{\sqrt{6}}\right)$$

$$= \frac{3\sqrt{6}}{6}$$

$$= \frac{\sqrt{6}}{2}$$

Binomial

$$\frac{3}{4+\sqrt{3}}\left(\frac{4-\sqrt{3}}{4-\sqrt{3}}\right)$$

$$\frac{12-3\sqrt{3}}{16-3} = \frac{12-3\sqrt{3}}{13}$$

# Assignment:

Worksheet - Sketching Angles in Radians.doc

Solutions...

1. $-\frac{5}{3}$

2. $\frac{-\sqrt{6}}{3}$

3. $-2-\sqrt{3}$

4. $\frac{-5}{3}$

5. $\frac{4+3\sqrt{3}}{6}$

6. $\frac{-10}{3}$

7. $0$

8. $\frac{3+3\sqrt{3}}{-2}$

## Attachments

Worksheet - Sketching Angles in Radians.doc