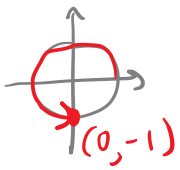
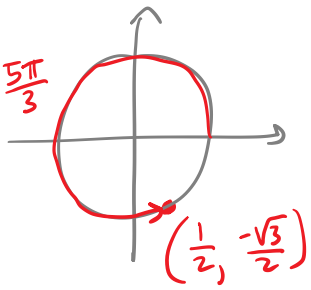
1. Find the exact value without a calculator.

a) $\sin\frac{3\pi}{2} = \boxed{-1}$



b) $\cos 2\pi = \boxed{1}$

c) $\sin\frac{5\pi}{3} = \boxed{\frac{-\sqrt{3}}{2}}$

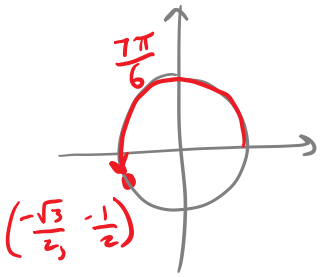


"Over 3 family"

d) $\cot\frac{7\pi}{6} = \frac{(-\sqrt{3}/2)}{(-1/2)}$

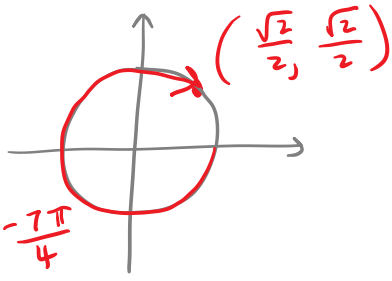
$= \frac{-\sqrt{3}}{2} \cdot \left(-\frac{2}{1}\right)$

$= \boxed{\sqrt{3}}$



"Over 6 family"

e) $\cos\left(-\frac{7\pi}{4}\right) = \boxed{\frac{\sqrt{2}}{2}}$



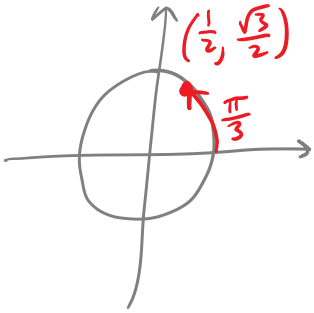
"Over 4 family"

f) $\sec\frac{19\pi}{3} = \sec\frac{\pi}{3} = \frac{1}{\cos\frac{\pi}{3}} = \frac{1}{(1/2)} = \boxed{2}$

$\frac{19\pi}{3} - \frac{18\pi}{3}$

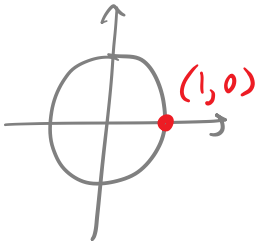
$= \frac{\pi}{3}$

"Over 3 family"



g) $\csc 42\pi = \csc 0 = \frac{1}{\sin 0} = \frac{1}{0}$ **undefined**

$42\pi - 42\pi = 0$



Q: What is it that you will break even when you name it?

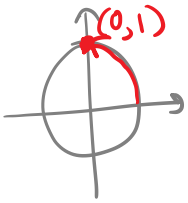
2. Find the exact value without a calculator.

a) $\sin\frac{5\pi}{2} = \sin\frac{\pi}{2} = \boxed{1}$

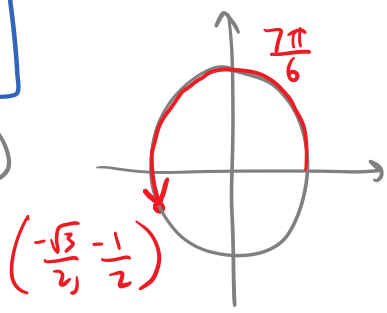
$\frac{5\pi}{2} - 2\pi$

$= \frac{5\pi}{2} - \frac{4\pi}{2}$

$= \frac{\pi}{2}$



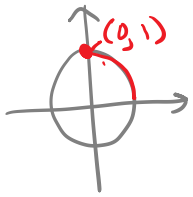
c) $\tan\frac{7\pi}{6} = \frac{(-1/2)}{(-\sqrt{3}/2)} = \boxed{\frac{1}{\sqrt{3}}}$ (or $\frac{\sqrt{3}}{3}$)



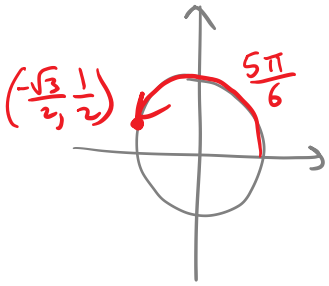
"Over 6 family"

e) $\sec\frac{\pi}{2} = \frac{1}{\cos\frac{\pi}{2}} = \frac{1}{0}$

undefined

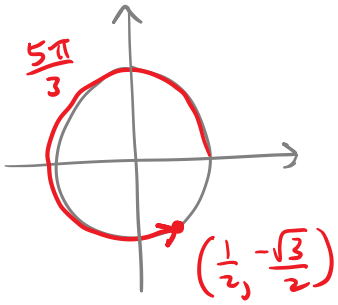


g) $\sin\frac{5\pi}{6} = \frac{1}{2}$



"Over 6 family"

i) $\tan\frac{5\pi}{3} = \frac{\left(-\sqrt{3}/2\right)}{\left(1/2\right)} = -\sqrt{3}$

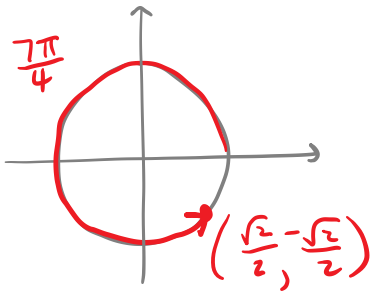


"Over 3 family"

k) $\sec\frac{7\pi}{4} = \frac{1}{\cos\frac{7\pi}{4}}$

$= \frac{1}{\left(\sqrt{2}/2\right)}$

$= \frac{2}{\sqrt{2}}$ (or $\sqrt{2}$)



"Over 4 family"