

Trig Ratios (4.3) *p202 day 5*

assignment 2 due now

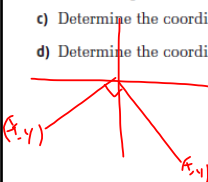
COMC Thursday 8:50 in Physics Lab

Peak-End Rule  
colonoscopy  
hands in water

Trig Ratios (4.3) *p187#6, 13, 15 p202 day 5*

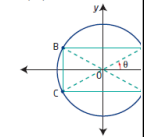
13. If  $P(\theta) = \left(-\frac{1}{3}, -\frac{2\sqrt{2}}{3}\right)$ , determine the following.

- What does  $P(\theta)$  represent? Explain using a diagram.
- In which quadrant does  $\theta$  terminate?
- Determine the coordinates of  $P\left(\theta + \frac{\pi}{2}\right)$ .
- Determine the coordinates of  $P\left(\theta - \frac{\pi}{2}\right)$ .



6. Determine one possible measure for  $\theta$  if  $P(\theta)$  is the point on the unit circle.

15. a) In the diagram, A has coordinates  $(\cos \theta, \sin \theta)$ . ABCD is a rectangle with vertices A, B, C, and D. What are the coordinates of B, C, and D?



- $\theta + \pi$
- $\theta + \frac{\pi}{2}$
- $-\theta + \pi$
- $-\theta + \frac{\pi}{2}$

b) How are the answers in part a) related to the answers in part b) if  $\theta$  is given as the measure of the angle  $\theta$ ?

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ex1: Give exact values for:

$$\cos \frac{\pi}{3} = \frac{1}{2} \quad \sin \frac{\pi}{4} = \frac{\sqrt{2}}{2} \quad \tan \frac{\pi}{6} = \frac{1}{\sqrt{3}}$$

$$\sin \frac{5\pi}{3} = -\frac{\sqrt{3}}{2} \quad \sec \frac{3\pi}{4} = -\frac{2}{\sqrt{2}} \quad \csc \frac{7\pi}{6} = -\frac{2}{1}$$

Note:  $\csc \theta = \frac{1}{\sin \theta} \quad \sec \theta = \frac{1}{\cos \theta} \quad \cot \theta = \frac{1}{\tan \theta}$   
These are called Reciprocal Ratios

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ex2: Give exact values for:

$$\sin\left(-\frac{4\pi}{3}\right) = \frac{\sqrt{3}}{2} \quad \cot\left(\frac{3\pi}{2}\right) = \frac{1}{\tan\left(\frac{3\pi}{2}\right)}$$

$$\sec \frac{\pi}{3} = \frac{2}{1} \quad \sin\left(-\frac{5\pi}{3}\right) = \frac{\sqrt{3}}{2}$$

*1acei*

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ex3: Give approximate values for:

$$\tan \frac{7\pi}{5} \approx 3.08 \quad \sin 4.2 \approx -0.87 \quad \cos 260^\circ \approx -0.17$$

$$\csc(-70^\circ) \approx -1.06 \quad \tan(-500^\circ) \approx 0.839$$

*2aceg  
1ace*


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ex4: Calculate  $\sin^{-1}(0.879)$  *use degs*

$61.5^\circ$

ex5: Solve  $\sin \theta = 0.879$  on the domain  $0 \leq \theta < 2\pi$

$\theta = \sin^{-1}(0.879)$   
 $\theta \approx 1.07 \text{ rad}$   
and  $\pi - 1.07 \approx 2.07$



*to find 2nd angle use  $\pi - \theta$*

Trig Ratios (4.3)

p202

day 5

HW: 9ace, 10a, 14