

Quiz 5 Practice Test

1. If  $0 \leq \theta < \frac{\pi}{2}$  and  $\sin \theta = \frac{3}{7}$ , find  $\cos\left(\frac{\pi}{2} + \theta\right)$

2. Given  $\sin \theta = -\frac{2}{3}$ ,  $\cos \theta > 0$ , find  $\cot \theta$  ?

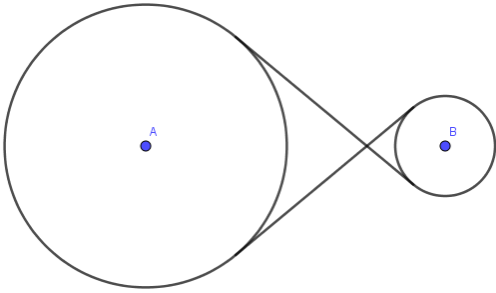
3. Let  $\tan \theta = \frac{3}{4}$ , use a unit circle to analyze

(a) which quadrant will be the terminal side of  $\left(\theta + \frac{3\pi}{2}\right)$ ?

(b) Find  $\sec\left(\theta + \frac{3\pi}{2}\right)$

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4. A conveying belt connects two drums in the following manner. If the belt is moving at 2 m/s, and drum B is rotating at 300 rpm, what is the diameter (in meters, exact value, no decimals) of drum A if drum A is 5 times bigger than drum B in the diameter?



5. John's GPS coordinates are ( $37.3382^\circ$  N,  $121.8803^\circ$  W). Mary lives in a city some miles away east of John. If Mary saw the sunrise at 6:43 am and John saw the sunrise at 7:02 am this morning. How far apart (in miles) is John from Mary? (Assume the radius of the earth is 4000 miles)

6. Find Mary's GPS coordinates in DMS system? (round your answers to the whole second)