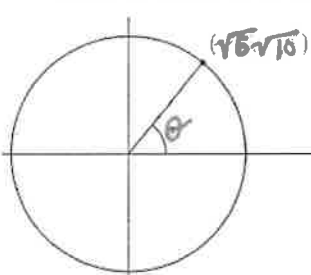


Unit Circle Trig – F.TF.A.2

1. What is the sine of the angle pictured below?

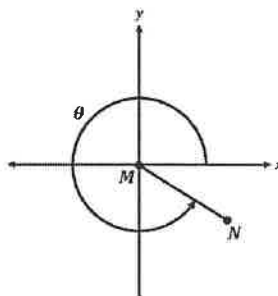


A $\frac{\sqrt{10}}{6}$ B $\frac{\sqrt{6}}{4}$ C $\frac{\sqrt{6}}{10}$ D $\frac{\sqrt{10}}{4}$ E $\frac{\sqrt{7}}{6}$

2. The terminal side of angle θ intersects the point $(\frac{6}{7}, \frac{\sqrt{13}}{7})$ on the unit circle. What is the $\sin\theta$, $\cos\theta$, and $\tan\theta$? Place a checkmark in each column. (Select the 3 corresponding letters)

	$\sin\theta$	$\cos\theta$	$\tan\theta$
$\frac{6}{7}$	A	B	C
$\frac{\sqrt{13}}{7}$	D	E	F
$\frac{7}{6}$	G	H	I
$\frac{\sqrt{13}}{6}$	J	K	L

3. Consider the angle θ made with the positive x -axis and terminal side MN , as shown.



If the x -coordinate of point N is $\frac{\sqrt{3}}{2}$, what is the value of θ ?

A $\frac{5\pi}{6}$
 B $\frac{11\pi}{6}$
 C $\frac{7\pi}{3}$
 D $\frac{10\pi}{3}$

4. If $\sin^2(x) = \frac{3}{4}$, which *could* be the value of $\cos(x)$?

A $\frac{1}{4}$
 B $\frac{1}{2}$
 C $\frac{\sqrt{2}}{2}$
 D $\frac{\sqrt{3}}{2}$

5. What is $\cos\theta$ if θ is an angle in the second quadrant and $\sin\theta = \frac{1}{2}$?

A $-\frac{\sqrt{2}}{2}$ B $-\frac{1}{2}$ C $-\frac{\sqrt{3}}{3}$ D $-\frac{\sqrt{3}}{2}$ E -1

6. An angle, x , in standard position lies with its terminal side in Quadrant I and $\cos(x) = 0.866$. What is the *approximate* value of $\sin(x)$?

A -0.5
 B -0.25
 C 0.25
 D 0.5

7. Determine whether each statement is true or false.

a. The angle measure 45° is equivalent to $\frac{\pi}{4}$ radians.
 b. The angle measure 60° is equivalent to $\frac{\pi}{6}$ radians.
 c. The angle measure 225° is equivalent to $\frac{3\pi}{4}$ radians.
 d. The angle measure 300° is equivalent to $\frac{3\pi}{4}$ radians.

8. Point $A\left(\frac{1}{2}, \frac{\sqrt{3}}{2}\right)$ is on the unit circle whose center is the origin. If θ is an angle in standard position whose terminal ray passes through point A , what is the value of $\sin\theta$?

9. θ is an angle in quadrant III and $\cos \theta = -\frac{\sqrt{2}}{2}$. So, $\sin \theta = ?$

- a. $\frac{\sqrt{2}}{2}$ b. $-\frac{\sqrt{2}}{2}$
 c. $\frac{1}{2}$ d. $-\frac{\sqrt{3}}{2}$

10. What is $\cos \theta$ if θ is an angle in the fourth quadrant and $\sin \theta = -\frac{\sqrt{3}}{2}$?

- a. $\frac{\sqrt{2}}{2}$ b. $-\frac{\sqrt{2}}{2}$
 c. $\frac{1}{2}$ d. $-\frac{1}{2}$

11. Select all the angles where $\sin \theta = 0$.

- a. 0° b. 90°
 c. 180° d. 270°
 e. 360° f. $2\pi \text{ rad}$

12. Select all the angles where $\tan \theta = 1$.

- a. 0° b. 45°
 c. 135° d. 225°
 e. 270° f. 315°

13.

Which is equal in value to $\sin 180^\circ$?

- 1) $\tan 45^\circ$
 2) $\cos 90^\circ$
 3) $\cos 0^\circ$
 4) $\tan 90^\circ$

14.

In the interval $0^\circ \leq x < 360^\circ$, $\tan x$ is undefined when x equals

- 1) 0° and 90°
 2) 90° and 180°
 3) 180° and 270°
 4) 90° and 270°

15.

The value of $(\sin 60^\circ)(\cos 60^\circ)$ is

- 1) $\frac{3}{4}$
 2) $\frac{\sqrt{2}}{4}$
 3) $\frac{\sqrt{3}}{3}$
 4) $\frac{\sqrt{3}}{4}$

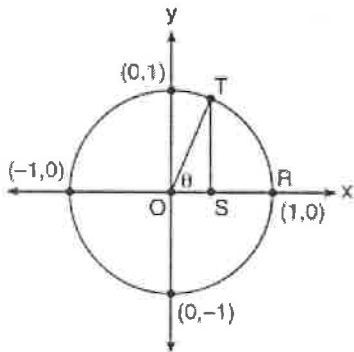
16.

The expression $\sin 240^\circ$ is equivalent to

- 1) $\sin 60^\circ$
 2) $\cos 60^\circ$
 3) $-\sin 60^\circ$
 4) $-\cos 60^\circ$

17.

In the diagram below, the length of which line segment is equal to the exact value of $\sin \theta$?



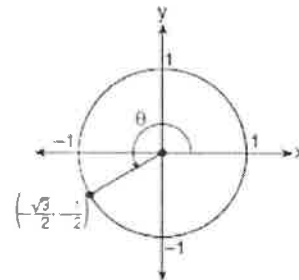
- 1) \overline{TO}
 2) \overline{TS}
 3) \overline{OR}
 4) \overline{OS}

18.

In the accompanying diagram of a unit circle, the

ordered pair $\left(-\frac{\sqrt{3}}{2}, -\frac{1}{2}\right)$ represents the point

where the terminal side of θ intersects the unit circle.



What is $m\angle\theta$?

- 1) 210
 2) 225
 3) 233
 4) 240