

## Lesson 13.3 Worksheet

Name: \_\_\_\_\_

Use the given point on the terminal side of an angle  $\theta$  in standard position to evaluate the six trigonometric functions of  $\theta$ .

1.)  $(-7, -24)$

Evaluate the six trigonometric functions of  $\theta$ .

2.)  $\theta = 540^\circ$

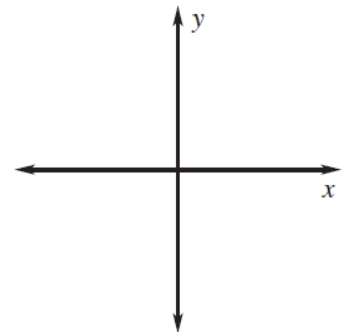
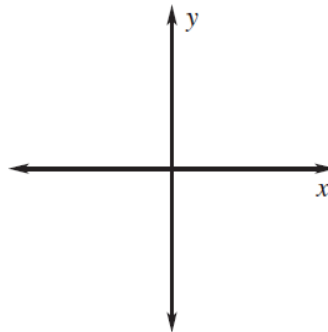
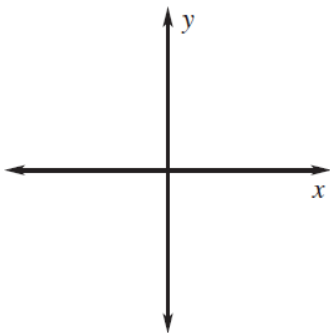
3.)  $\theta = \frac{7\pi}{2}$

Sketch the angle. Then find its reference angle. Answer in the unit of the given angle.

4.)  $-100^\circ$

5.)  $320^\circ$

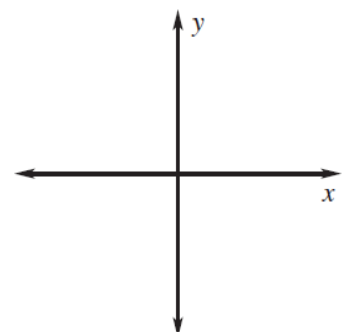
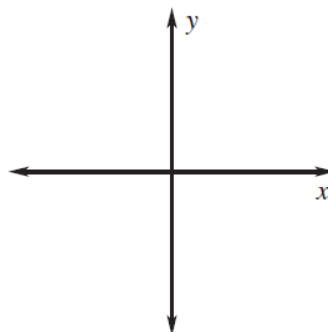
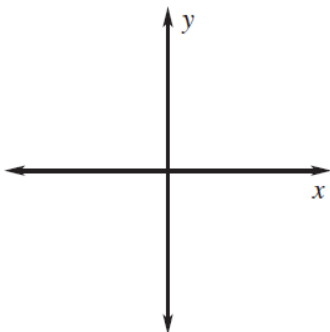
6.)  $-370^\circ$



7.)  $-\frac{5\pi}{6}$

8.)  $\frac{8\pi}{3}$

9.)  $\frac{15\pi}{4}$



Evaluate the function without using a calculator (i.e. ALL ANSWERS SHOULD BE EXACT, NO DECIMALS).

10.)  $\sin(-150^\circ)$

11.)  $\tan 240^\circ$

12.)  $\csc(-420^\circ)$

13.)  $\cos \frac{7\pi}{4}$

14.)  $\tan\left(-\frac{3\pi}{4}\right)$

15.)  $\sec \frac{11\pi}{6}$

Use the horizontal distance formula from the notes to answer questions 16 and 17.

16.) You and a friend each kick a football with an initial speed of 49 feet per second. Your kick is projected at an angle of  $45^\circ$  and your friend's kick is projected at an angle of  $60^\circ$ . About how much farther will your football travel than your friend's football?

17.) At what speed must the in-line skater launch himself off the ramp in order to land on the other side of the ramp?



18.) Solve  $\triangle DEF$  using the diagram and the given measurements.

$$D = 67^\circ, e = 10.5$$

