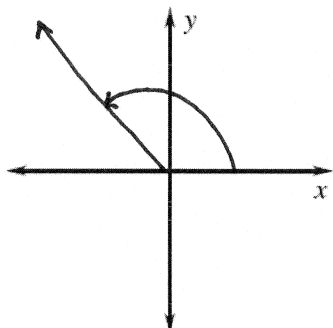


Lesson 13.2 Worksheet (Day 2)

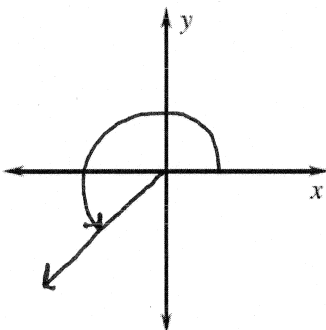
Name: Key

Draw an angle with the given measure in standard position.

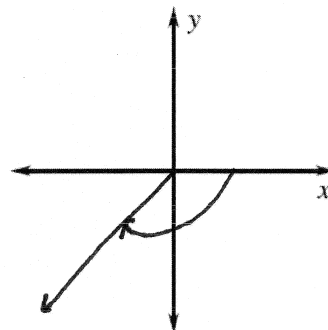
1.) 130°



2.) $\frac{5\pi}{4}$



3.) $-\frac{2\pi}{3}$



Find one positive angle and one negative angle that are coterminal with the given angle.

4.) -35°

+ sample answers

~~1000~~ $325^\circ, 685^\circ, \dots$

- sample answers

$-395^\circ, -755^\circ, \dots$

5.) 280°

+ sample answers

$640^\circ, 1000^\circ, \dots$

- sample answers

$-80^\circ, -440^\circ, \dots$

6.) $-\frac{\pi}{6} \pm \frac{12\pi}{6}$

+ sample answers

$\frac{11\pi}{6}, \frac{23\pi}{6}, \dots$

- sample answers

$-\frac{13\pi}{6}, -\frac{25\pi}{6}, \dots$

7.) $\frac{7\pi}{5} \pm \frac{10\pi}{5}$

+ sample answers

$\frac{17\pi}{5}, \frac{27\pi}{5}, \dots$

- sample answers

$-\frac{3\pi}{5}, -\frac{13\pi}{5}, \dots$

Convert the degree measure to radians or the radian measure to degrees.

8.) $270^\circ \cdot \frac{\pi}{180}$

$\frac{3\pi}{2}$

9.) $-135^\circ \cdot \frac{\pi}{180}$

$-\frac{3\pi}{4}$

10.) $\frac{11\pi}{6} \cdot \frac{180}{\pi}$

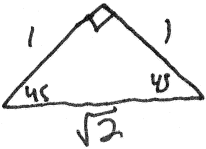
330°

11.) $-\frac{\pi}{18} \cdot \frac{180}{\pi}$

-10°

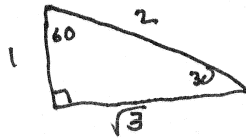
Evaluate the trigonometric function. When possible, give an exact answer. When using a calculator, round answers to the nearest hundredth.

12.) $\cos \frac{\pi}{4}$ (45°)



$$\cos \frac{\pi}{4} = \frac{\sqrt{2}}{2}$$

13.) $\sin \frac{\pi}{6}$ (30°)



$$\sin \frac{\pi}{6} = \frac{1}{2}$$

14.) $\cot \frac{\pi}{9}$

$$\frac{1}{\tan \frac{\pi}{9}}$$

$$\approx 2.75$$

15.) $\csc \frac{4\pi}{5}$

$$\frac{1}{\sin \frac{4\pi}{5}}$$

$$\approx 1.70$$

Find the arc length and area of a sector with the given radius r and central angle θ . Round answers to the nearest hundredth.

16.) $r = 5$ m, $\theta = \frac{\pi}{2}$

Arc Length

$$S = 5 \cdot \frac{\pi}{2} = 7.85 \text{ m}$$

Sector Area

$$A = \frac{1}{2} \cdot (5)^2 \cdot \frac{\pi}{2} = 19.63 \text{ m}^2$$

17.) $r = 11$ ft, $\theta = 200^\circ$

$$200^\circ \cdot \frac{\pi}{180^\circ} = \frac{10\pi}{9}$$

Arc length

$$S = 11 \cdot \frac{10\pi}{9} = 38.40 \text{ ft}$$

Sector Area

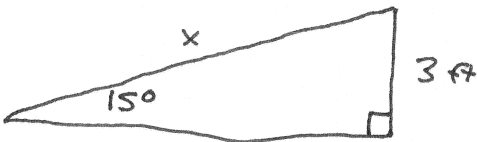
$$A = \frac{1}{2} \cdot (11)^2 \cdot \frac{10\pi}{9} = 211.18 \text{ ft}^2$$

18.) A ramp with an incline of 15° is being used to load material into a truck. The tailgate of the truck is 3 feet off of the ground. To the nearest tenth of a foot, find the length of the ramp.

$$x \cdot \sin 15 = \frac{3}{x}$$

$$x = \frac{3}{\sin 15}$$

$$x \approx 11.6 \text{ ft}$$



19.) An airplane climbs at an angle of 11° with the ground. Find the ground distance that the plane has covered when it has attained an altitude of 400 feet. Round to the nearest foot.

$$x \cdot \tan 11 = \frac{400}{x}$$

$$x = \frac{400}{\tan 11}$$

$$x \approx 2058 \text{ ft}$$

