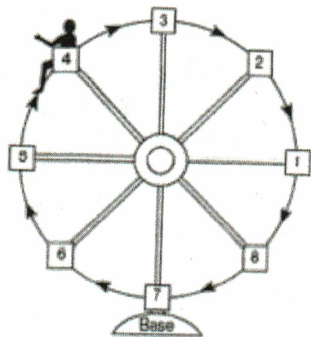1. Tammy is riding in car 4 of the Ferris wheel represented in the diagram below. The Ferris wheel is rotating in the direction indicated by the arrows. The eight cars are equally spaced around the circular wheel. Express, in radians, the measure of the smallest angle through which she will travel to reach the bottom of the Ferris wheel.

$$\frac{2\pi}{8} = \frac{\pi}{4}$$

$$\left(\frac{5\pi}{4}\right)$$

2. What is the radian measure of the angle formed by the hands of a clock at 2:00 pm?

$$2\pi \cdot \frac{2 \, hr}{12} = \frac{\pi}{3}$$

3. Through how many radians does the minute hand of a clock turn in 24 minutes?

$$\frac{2\pi}{60} \qquad \frac{\pi}{30} \cdot 24 \qquad \frac{24\pi}{30} \qquad \frac{4\pi}{5}$$
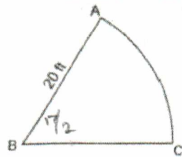
4. Find the exact value of the cos–210°.

$$-\frac{\sqrt{3}}{2}$$

5. Find the exact value of $\tan\dfrac{3\pi}{4}$.

$$-1$$

6. A sprinkler system is set up to water the sector shown in the accompanying diagram with angle ABC measuring $\frac{\pi}{2}$ and radius AB=20 feet. What is the length of arc AC, to the nearest tenth of a foot.
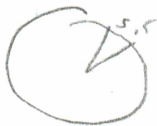

$r \theta$

$= \frac{\pi}{2} \cdot 20 = \left(10\pi \right)$

31.4 ft

7. Express, in terms of π, the length of the arc intercepted by a central angle of 30° in a circle with radius 30.

$\frac{30}{360} \cdot 2 \cdot \pi (30)$

$= 5\pi$

8. Joey buys a large circular pizza that is divided into eight equal slices. He measures along the outer edge of the crust from ONE piece and finds it to be 5.5 inches. What is the diameter of the pizza to the nearest inch?
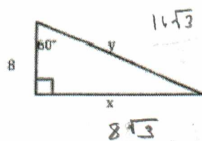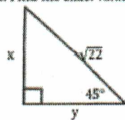

$5.5 = r \cdot .25\pi$

$7 = r$

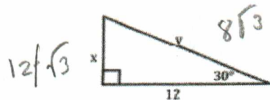$d = 14$

EXACT VALUES

2. Find the exact values of x and y

$8\sqrt{3}$

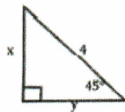3. Find the exact values of x and y

$\frac{\sqrt{22}}{\sqrt{2}} = \sqrt{11} = x, y$

4. Find the exact values for x and y

$12\sqrt{3}$ x

$\frac{12\sqrt{3}}{3}$

$.\sqrt{3}$

5. Find the exact values of x and y
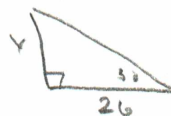

$\frac{2}{\sqrt{2}} = \frac{2\sqrt{2}}{2} = \sqrt{2} = x, y$

0. A flagpole projects a shadow on the ground that is 26 feet long. The angle of elevation is 30°. What is the approximate height of the flagpole?
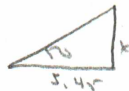
$$\tan 30 = \frac{x}{26}$$

15 ft

11. The sun casts a shadow of a man on the ground that is 5.45 feet long. The angle of elevation is 50°. What is the approximate height of the man?

5.45 tan 50

6.49 ft
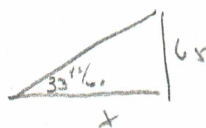
12. The sun casts a shadow of a pine tree on the ground. The tree is 65 feet tall. The angle of elevation is 33° 42'. How long is the shadow?

$$\tan 33.7 \quad \frac{65}{x}$$

97.46 ft

EXTRA!!!

A flagpole stands on level ground. Two cables, r and s, are attached to the pole at a point 16 feet above the ground. The combined length of the two cables is 50 feet. If cable r is attached to the ground 12 feet from the base of the pole, what is the measure of the angle, s, to the nearest degree, that cable s makes with the ground? Make a diagram that represents the situation.
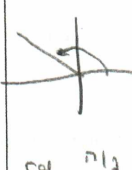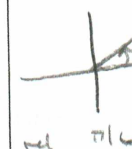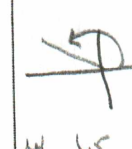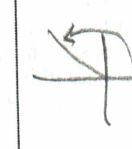
$$\sin \theta = \frac{16}{30}$$

$$\theta = 30, 23$$
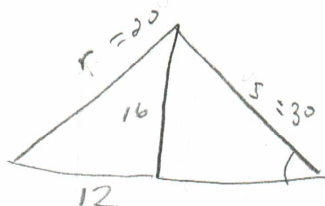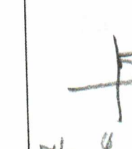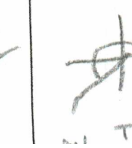
Fill in the following chart:

Fill in the following chart:

Angle	Quadrant	Sketch in Standard Position	Degree Measure	A Positive Coterminal Angle	A Negative Coterminal Angle	Complement	Supplement
1. $\frac{2\pi}{3}$	II	ref $\pi/3$	$120°$	480 $\frac{8\pi}{3}$	-240 $-\frac{4\pi}{3}$	$\emptyset$	$\frac{\pi}{3}$
2. $\frac{\pi}{6}$	I	ref $\pi/6$	$30°$	$390°$ $\frac{13\pi}{6}$	-330 $\frac{-11\pi}{6}$	$\frac{\pi}{3}$	$\frac{5\pi}{6}$
18. $115°$	II	ref 65	$115°$	$475°$	-245	$\emptyset$	$65°$
19. $473°$	II	ref $67°$	$113°$	$113°$	$247°$	$\emptyset$	$67°$
6. $\frac{\pi}{2}$	$\emptyset$	ref 0	$90°$	$\frac{5\pi}{2}$	$-\frac{3\pi}{2}$	$0°$	$\pi/2$
7. $\frac{7\pi}{6}$	III	ref $\pi/6$	$210°$	$570°$	$-150°$	$\emptyset$	$\emptyset$