

GEOMETRY SEMESTER TWO EXAM
(Happy almost summer to you!!)

Name:

Date:

No resources may be used for this exam. Show all work, and circle one answer for each problem. There are seven pages.

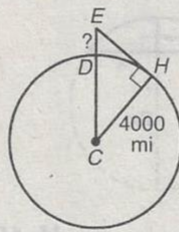
1.

Which sector does NOT have an area of 3π ?

- A central angle 135° ; radius $2\sqrt{2}$
- B central angle 80° ; radius 3
- C central angle 67.5° ; radius 4
- D central angle 270° ; diameter 4

2.

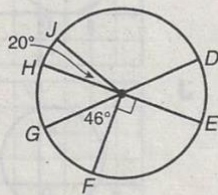
A mountain climber is standing at the top of Mount Everest. The distance from the summit to the horizon is about 210 miles. About how high is Mount Everest?



- F 5.5 mi
- G 11 mi
- H 210 mi
- J 8000 mi

3.

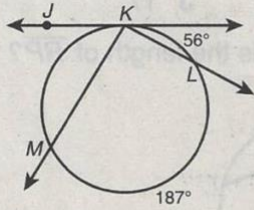
Which of these arcs has a measure of 134° ?



- A \widehat{FJ}
- B \widehat{DF}
- C \widehat{EG}
- D \widehat{DH}

4. *Note: 56° is the measure of the arc, not the angle.

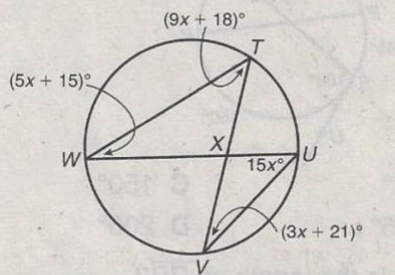
What is $m\angle JKM$?



- A 28° C 90°
 B 58.5° D 117°

- 5.

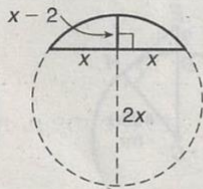
Which is $m\angle VXU$?



- A 105° C 122.5°
 B 120° D 126°

- 6.

What is the length of the diameter?



- F 5 H 10
 G 8 J Not here

- 7.

Quadrilateral $PQRS$ is inscribed in a circle. The ratio of $m\angle P$ to $m\angle R$ is $2 : 4$. What is $m\angle R$?

- F 30° H 120°
 G 60° J Not here

8.

What is $m\angle TQR$?

F 65° **H** 110°
G 70° **J** 115°

9.

What is the length of \overline{SQ} ?

F 5 **H** 13
G 9 **J** 17

10.

Which is the equation of a circle that passes through $(2, 2)$ and is centered at $(5, 6)$?

A $(x - 6)^2 + (y - 5)^2 = 25$
B $(x - 5)^2 + (y - 6)^2 = 5$
C $(x + 5)^2 + (y + 6)^2 = 25$
D $(x - 5)^2 + (y - 6)^2 = 25$

11.

Which is the graph of $(x - 1)^2 + (y + 2)^2 = 4$?

F **H**
G **J**

12.

A traffic yield sign is in the shape of an equilateral triangle. If each side is 36 inches, what is the height of the sign to the nearest tenth of an inch?

- F 18.0 in. H 25.5 in.
G 20.8 in. J 31.2 in.

13.

What is the measure of one exterior angle of a regular octagon?

- A 8° C 37.5°
B 22.5° D 45°

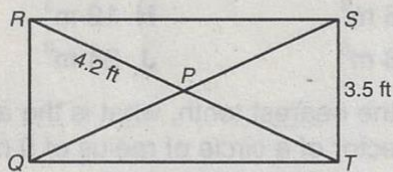
14.

The vertices of a quadrilateral are $(4, 6)$, $(7, -2)$, $(-1, -5)$, and $(-4, 3)$. Which is the best classification for the quadrilateral?

- A parallelogram C rectangle
B rhombus D square

15.

The figure represents a rectangular gate with diagonal braces. To the nearest tenth, what is the width, QT , of the gate?



- A 3.9 ft C 7.0 ft
B 4.9 ft D 7.6 ft

16.

When the angle of elevation to the sun is 26° , a flagpole casts a shadow that is 82 feet long. What is the height of the flagpole to the nearest foot?

- F 36 ft H 74 ft
G 40 ft J 166 ft

17.

The legs of a right triangle measure 11.4 meters and 15.1 meters. To the nearest tenth, which could be the measure of the smallest angle?

- A** 31.1° **C** 38.6°
B 37.1° **D** 52.9°

18.

To the nearest tenth, what is the surface area of a right cone with a height of 10.1 centimeters and a diameter of 8.8 centimeters?

- A** 213.1 cm^2 **C** 266.6 cm^2
B 246.0 cm^2 **D** 613.6 cm^2

19.

A hollow globe of the world is in the shape of a sphere. The diameter of the sphere is 22 inches. To the nearest cubic inch, how much air does the globe hold?

- F** 380 in^3 **H** 4181 in^3
G 507 in^3 **J** 5575 in^3

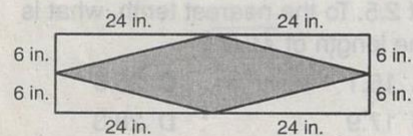
20.

To the nearest tenth, what is the area of a regular octagon with a perimeter of 32 meters?

- F** 77.3 m^2 **H** 180.0 m^2
G 154.5 m^2 **J** 1024 m^2

21.

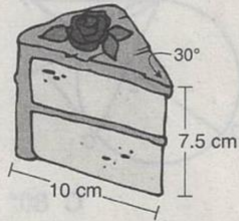
A rectangular scarf with the design shown is set out to dry. A fly lands on the scarf. What is the probability that it lands in the shaded region?



- F** 0.25 **H** 0.75
G 0.50 **J** 0.80

22.

A slice of cake is a sector of a cylinder. To the nearest hundredth, what is the volume of the piece of cake? Use 3.14 for π .



- A 26.17 cm^3 C 196.25 cm^3
 B 39.25 cm^3 D Not here

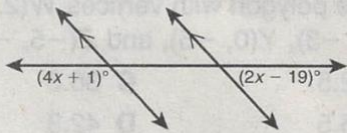
23.

The ratio of the angle measures in a triangle is 2 : 5 : 11. What is the measure of the largest angle?

- A 10° C 18°
 B 11° D 110°

24.

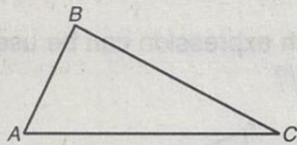
What is the value of x ?



- F 9.5 H 33
 G 18 J 81

25.

What information makes it possible to find the remaining measures in $\triangle ABC$ using the Law of Sines?

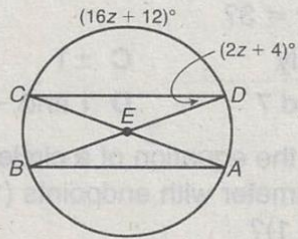


- A $AC = 13$, $m\angle A = 62^\circ$, $AB = 6$
 B $AC = 13$, $m\angle B = 88^\circ$, $AB = 6$
 C $AC = 13$, $AB = 6$, $BC = 11$
 D $m\angle A = 63^\circ$, $m\angle B = 88^\circ$,
 $m\angle C = 29^\circ$

EXTRA CREDIT:

1.

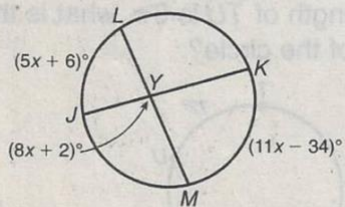
Which is $m\widehat{BA}$?



- A** 80° **C** 128°
B 120° **D** 140°

2.

What is $m\angle LYK$?



- F** 12 **H** 98
G 66 **J** Not here

3. *Hint: Try the Law of Cosines!

The sides of a triangle measure 18 inches, 25 inches, and 36 inches. To the nearest degree, what is the measure of the largest angle?

- A** 113° **C** 157°
B 147° **D** 159°