

## GRE Geometry Practice Test 2

1)

$$x \geq 1$$

Quantity A: The circumference of a circle with radius  $24x$

Quantity B: The area of a circle with a diameter one fourth the radius of the circle in Quantity A

Which of the following is true?

Possible Answers:

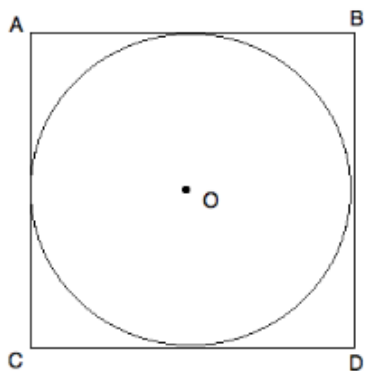
Quantity A is larger.

Quantity B is larger.

The relationship between the two values cannot be determined.

The two quantities are equal.

2)



Circle  $O$  has a center in the center of Square  $ABCD$ .

The area of Square  $ABCD$  is  $576 \text{ in}^2$ .

What is the circumference of Circle  $O$ ?

Possible Answers:

$176\pi \text{ in}$

$12\pi \text{ in}$

$144\pi \text{ in}$

$24\pi \text{ in}$

$\frac{12}{\pi} \text{ in}$

3)

What is the area of a circle, one-quarter of the circumference of which is 5.5 inches?

Possible Answers:

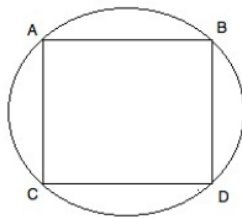
$\pi/3$

$121/\pi$

$121\pi$

$225\pi$

4)



In the diagram above, square ABCD is inscribed in the circle. If the area of the square is 9, what is the area of the circle?

Possible Answers:

$3\pi$

$18\pi$

$3\sqrt{2}\pi$

$9\pi$

$4.5\pi$

5)

**Quantitative Comparison**

**Quantity A:** Area of a circle with radius  $r$

**Quantity B:** Perimeter of a circle with radius  $r$

Possible Answers:

Quantity B is greater.

The two quantities are equal.

Quantity A is greater.

The relationship cannot be determined from the information given.

6)

**Quantitative Comparison**

**A circle has a radius of 2.**

**Quantity A:** The area of the circle

**Quantity B:** The circumference of the circle

Possible Answers:

The two quantities are equal.

Quantity A is greater.

The relationship cannot be determined from the information given.

Quantity B is greater.

7)

Quantitative Comparison

Quantity A: Area of a right triangle with sides 7, 24, 25

Quantity B: Area of a circle with radius 5

Possible Answers:

Quantity A is greater.

Quantity B is greater.

The two quantities are equal.

The relationship cannot be determined from the information given.

8)

If a circular garden with a radius of 3 ft. is bordered by a circular sidewalk that is 2 ft. wide, what is the area of the sidewalk?

Possible Answers:

$14\pi$

$12\pi$

$16\pi$

$20\pi$

$18\pi$

9)

If a circular monument with a radius of 30 feet is surrounded by a circular garden that is 20 feet wide, what is the area of the garden?

Possible Answers:

$2500\pi$

$400\pi$

$200\pi$

$900\pi$

$1600\pi$

10)

A small circle with radius 5 lies inside a larger circle with radius  $x$ . What is the area of the region inside the larger circle, but outside of the smaller circle, in terms of  $x$ ?

Possible Answers:

$\pi x^2 - 10\pi$

$2\pi x - 25\pi$

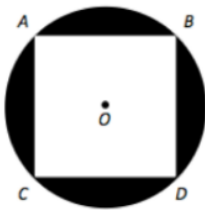
$2\pi x - 5\pi$

$\pi x^2 - 5\pi$

$\pi x^2 - 25\pi$

11)

Given circle  $O$  with a diameter of 2 and square  $ABCD$  inscribed within circle  $O$ , what is the area of the shaded region?



Possible Answers:

4

$4\pi - 2$

$\pi - 2$

2

12)

For \$15, Chelsea can get either a 16 *in* diameter pizza or two 8 *in* diameter pizzas. Which is the better deal?

Possible Answers:

two 8 *in*

The two values are equal.

Cannot be determined.

16 *in*

**13)**

Circle B has a circumference of  $36\pi$ . What is the area of circle A, which has a radius half the length of the radius of circle B?

Possible Answers:

18

$18\pi$

$9\pi$

$81\pi$

$324\pi$

**14)**

Which point could lie on the circle with radius 5 and center (1,2)?

Possible Answers:

(3,-2)

(4,6)

(3,4)

(-3, 6)

(4,-1)



15)

A circular fence around a monument has a circumference of 215 feet. What is the radius of this fence?

Possible Answers:

$$43\pi$$

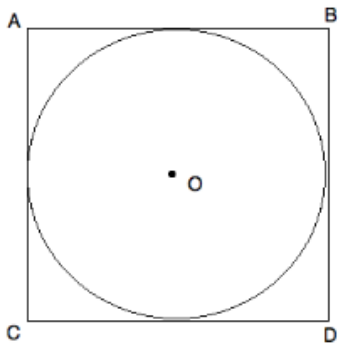
$$\frac{107.5}{\pi}$$

$$\pi\sqrt{125}$$

$$\frac{\sqrt{125}}{\pi}$$

$$107.5\pi$$

16)



Circle  $O$  has a center in the center of Square  $ABCD$ .

The area of Square  $ABCD$  is  $1156 \text{ in}^2$ .

What is the radius of Circle  $O$ ?

Possible Answers:

$42 \text{ in}$

$34 \text{ in}$

$21 \text{ in}$

$34\pi \text{ in}$

$17 \text{ in}$

17)

The formula to find the radius of the largest circle that can fit in an equilateral triangle is  $\text{Radius} = \frac{S}{2\sqrt{3}}$ , where  $S$  is the length of any one side of the triangle.

What is the largest diameter of a circle that can fit inside an equilateral triangle with a perimeter of 15 cm?

Possible Answers:

1.44 cm

4.33 cm

2.89 cm

8.66 cm

18)

Quantity A: The diameter of a circle with area of  $81\pi$

Quantity B: The diameter of a circle with circumference of  $30\pi$

Which of the following is true?

Possible Answers:

Both quantities are equal.

Quantity B is larger.

The relationship of the quantities cannot be determined.

Quantity A is larger.

19)

Quantity A: The diameter of a circle with area of  $109\pi$

Quantity B: The diameter of a circle with circumference of  $22\pi$

Which of the following is true?

Possible Answers:

The two quantities are equal.

Quantity A is larger.

Quantity B is larger.

The relationship between the quantities cannot be determined.

20)

A circle with an area of  $30\pi$  is divided into sectors with areas in a ratio of 1 : 2 : 3. What is the area of the largest sector?

Possible Answers:

$9\pi$

$18\pi$

$15\pi$

$10\pi$