# Geometry

**GRE REFRESHER**
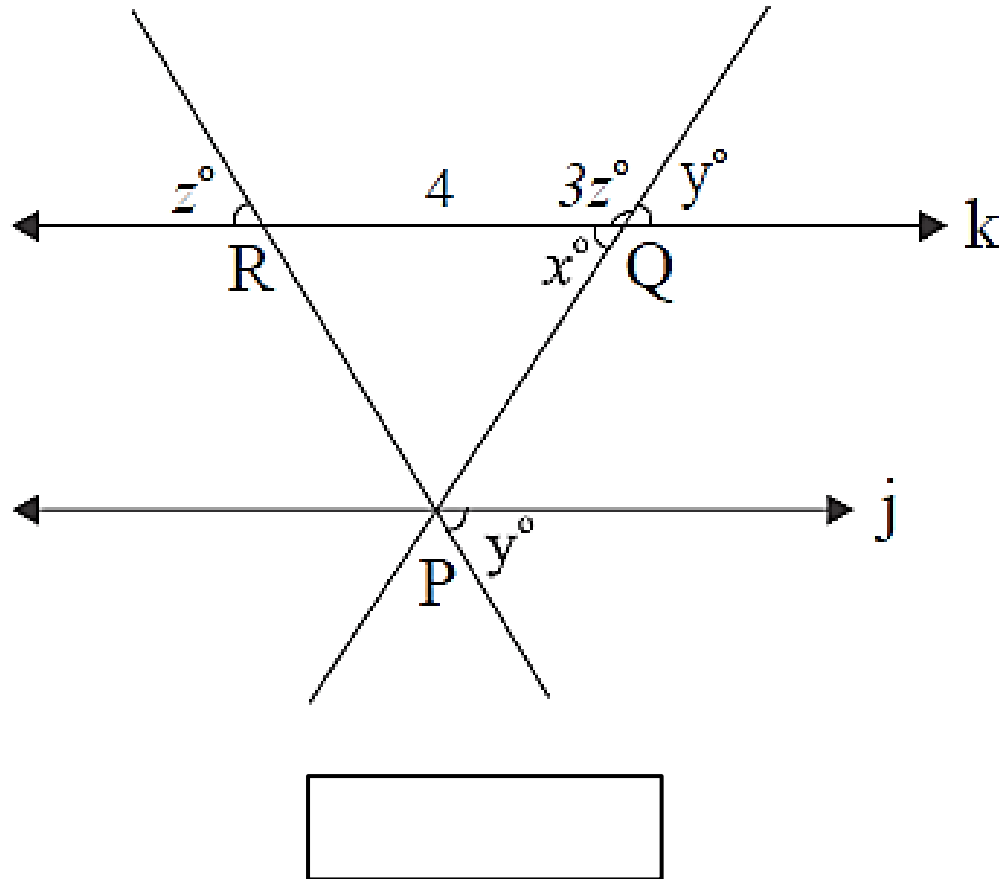
# Geometry
## Concepts Revision

# Geometry

1. In the figure below, line k is parallel to line j. What is the area of the triangle PQR in sq.units?

# Geometry

2. A company manufactures off-road bicycles with a front wheel of a diameter of 32 inches, and a rear wheel of a diameter of 24 inches. If on a particular race track, the front wheel averaged 5 revolutions per second, what is the average number of revolutions per minute for the rear wheel?
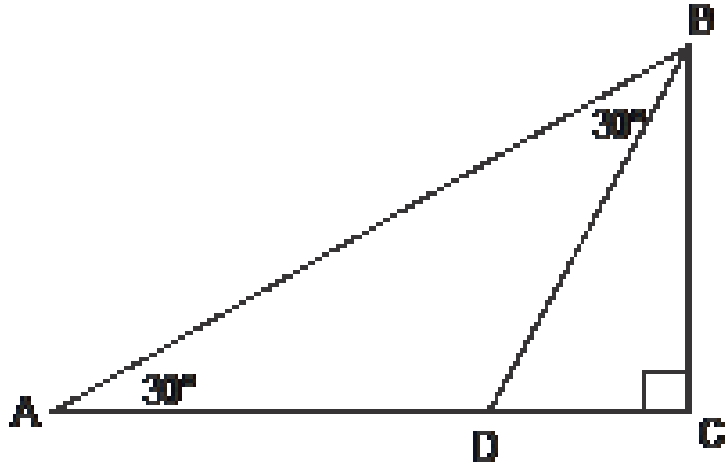
A. $\dfrac{20}{3}$

B. 45

C. 160

D. 225

E. 400

# Geometry

3. Point A is 10 miles West of Point B. Point B is 30 miles North of Point C. Point C is 20 miles East of Point D. What is the distance between points A and D?
   A. 10 miles
   B. $10\sqrt{3}$ miles
   C. 20 miles
   D. 30 miles
   E. $10\sqrt{10}$ miles

# Geometry

4.



In the given figure, the length of AB is 10.
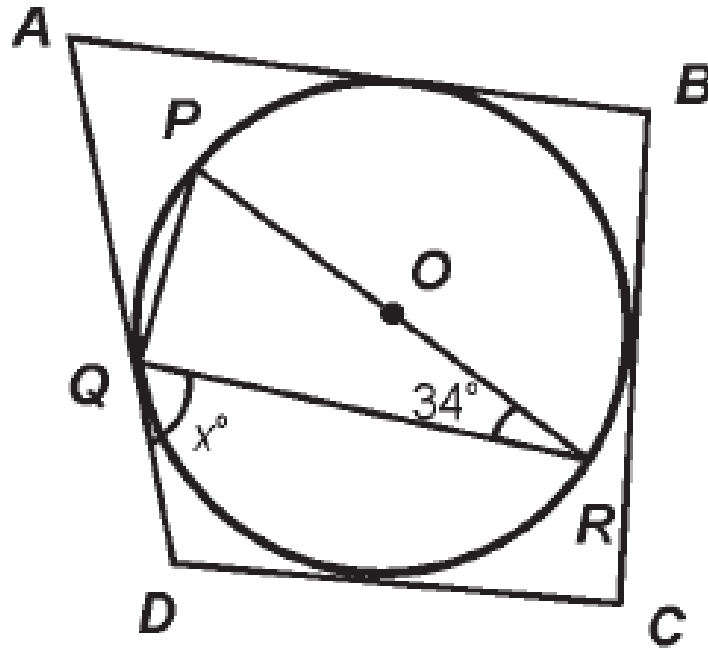
| Quantity A | Quantity B |
|---|---|
| The area of triangle BCD | $\dfrac{25\sqrt{3}}{6}$ |

A. Quantity A is greater
B. Quantity B is greater
C. The two quantities are equal
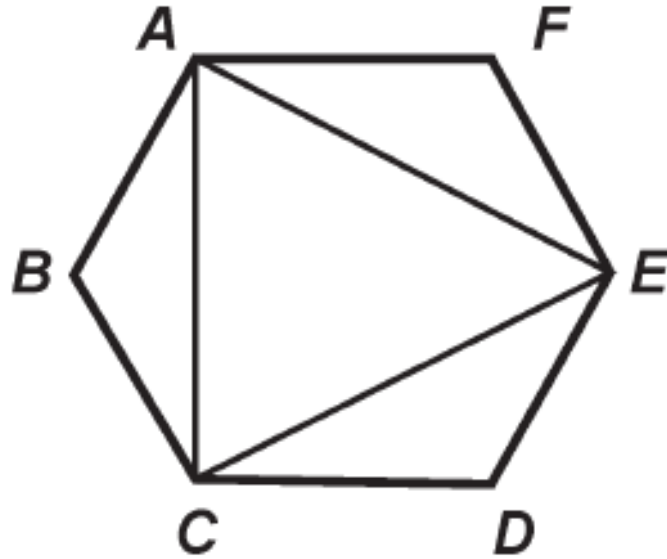D. The relationship cannot be determined from the information given.

# Geometry

5.



A circle with center O and diameter PR is inscribed in quadrilateral ABCD. What is the value of x?
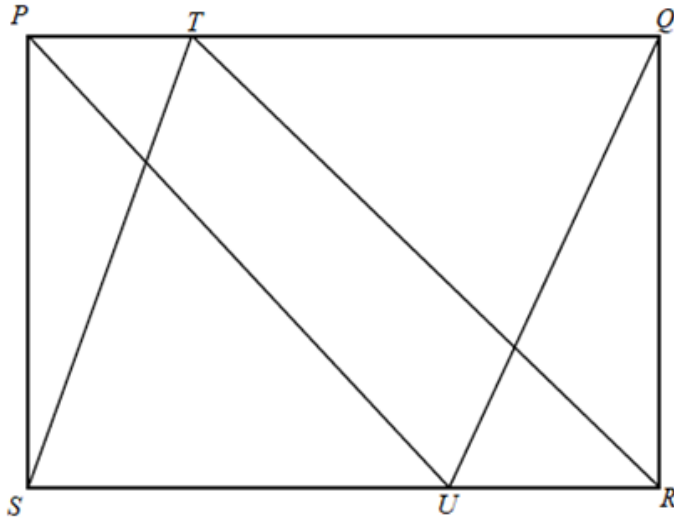
# Geometry

6.



In the figure above, ABCDEF is a regular hexagon. If area of $\triangle$ACE is $100\sqrt{3}$ cm², what is the area of the hexagon?

A. $150\sqrt{3}$
B. $160\sqrt{3}$
C. $180\sqrt{3}$
D. $200\sqrt{3}$
E. $240\sqrt{3}$

# Geometry



7.
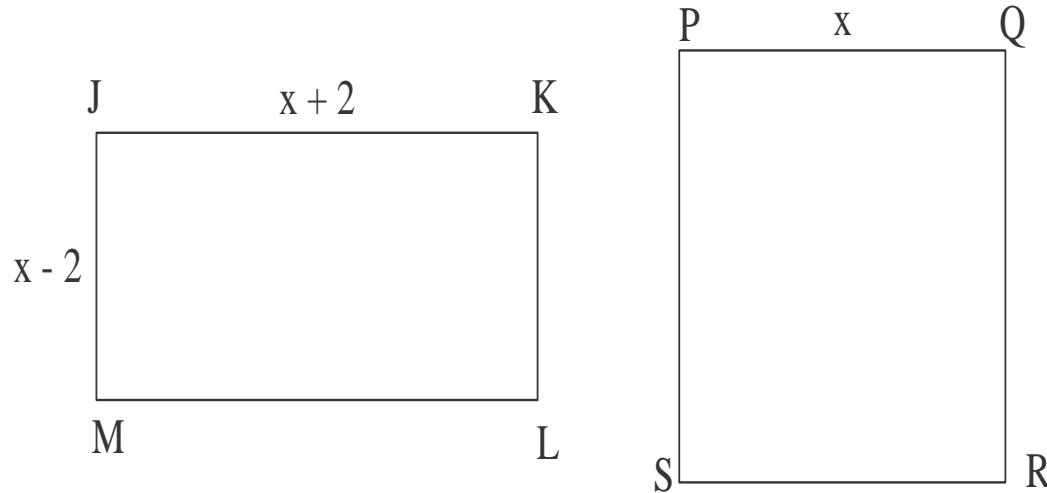
In the figure, the areas of parallelograms TQUS and PTRU are 4 and 3, respectively. What is the area of rectangle PQRS?

A. 4

B. 5

C. 6

D. 7

E. 8

# Geometry

8.


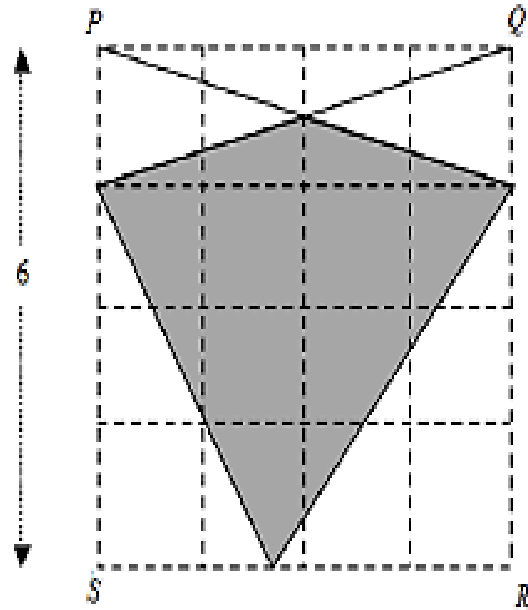
In the figure, the area of rectangle JKLM is 140. What is the area of the square PQRS?

A. 100

B. 112

C. 136

D. 144

E. 150

# Geometry

9.



In the figure above, the horizontal and vertical lines divide the square PQRS into 16 equal squares as shown. What is the area of the shaded region?
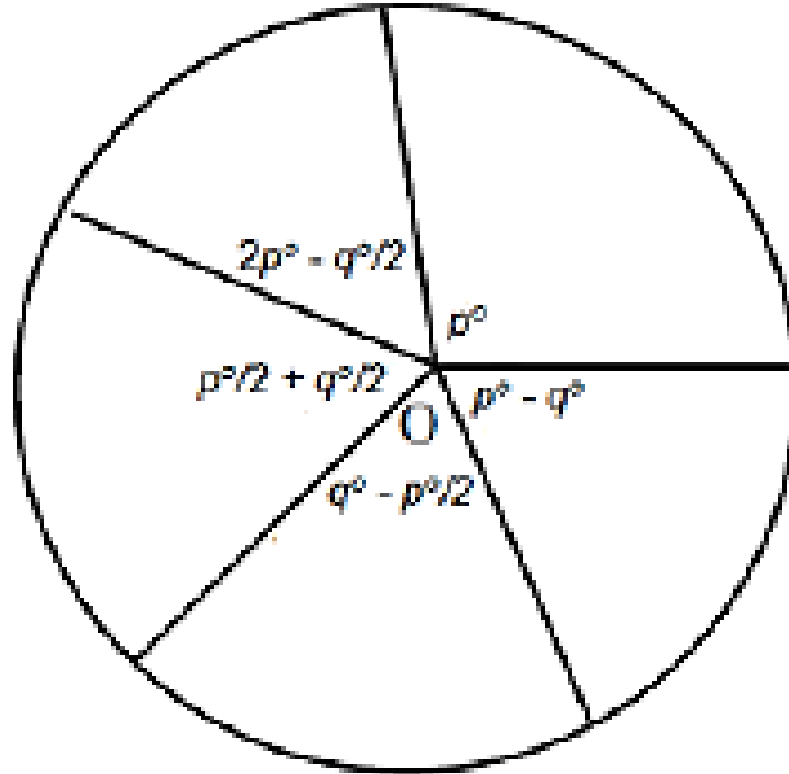
A. 6

B. 7.5

C. 9

D. 13.5

E. 15.75

# Geometry

10. From the figure, which one of the following could be the value of q?
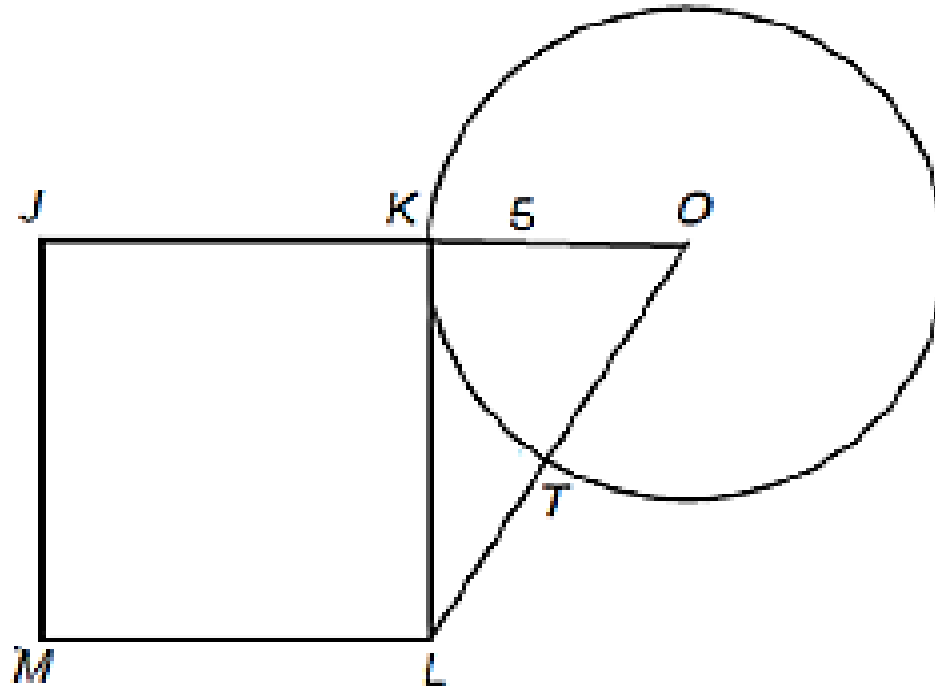    Indicate ALL such values.
    A. 22
    B. 33
    C. 44
    D. 55
    E. 66
    F. 77
    G. 88
    H. 99



Angles shown in figure: $2p° - q°/2$, $p°$, $p°/2 + q°/2$, $p° - q°$, $q° - p°/2$

# Geometry

11. In the figure, JKLM is a square, and OK is a radius of the circle.
    If KL is a tangent to the circle and TL = 8, then what is the area of the square?
    A. 81
    B. 100
    C. 121
    D. 144
    E. 169

# Geometry

12. A regular triangle and a regular quadrilateral is inscribed in a circle.

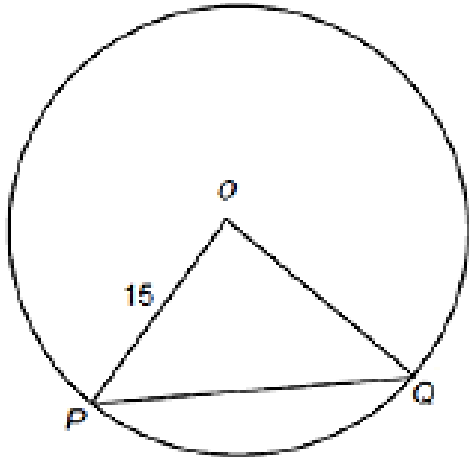| Quantity A | Quantity B |
|---|---|
| The perimeter of the triangle | The perimeter of the quadrilateral |

A. Quantity A is greater
B. Quantity B is greater
C. The two quantities are equal
D. The relationship cannot be determined from the information given.

# Geometry

13.



In the figure, O is the center of the circle. Which one of the following must be true about the perimeter of the triangle shown?

A. Always less than 15

B. Always greater than 45

C. Always greater than 60

D. Always less than 30

E. Less than 60 and greater than 30

# Geometry

14. A 2 foot by 2 foot by 2 foot solid cube is cut into 2 inch by 2 inch by 4 inch rectangular solids. What is the ratio of the total surface area of all the resulting smaller rectangular solids to the surface area of the original cube? (1 foot = 12 inches)

A. 2 : 1

B. 4 : 1

C. 5 : 1

D. 8 : 1

E. 10 : 1

# Geometry

15. Betty has a hemispherical shaped bowl, which she fills with water to bring every day. On Monday she left the bowl completely filled and found out on Monday evening that the depth of the water had reduced to half. If the surface area of the water in the bowl on Monday morning was 3200 cm$^2$ what is the surface area, in cm$^2$, of the water in the bowl on Monday evening?
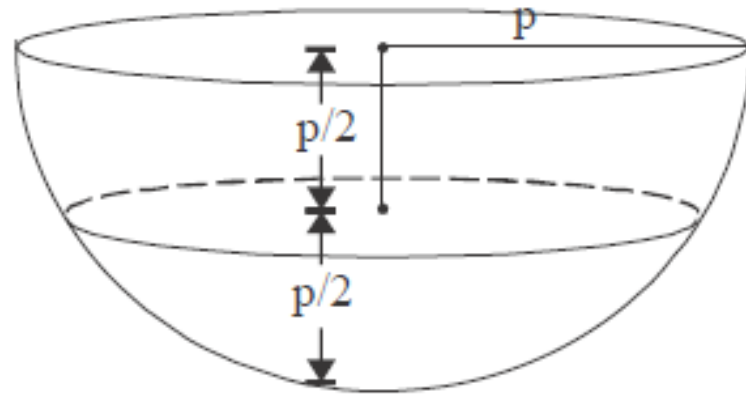


A. 2800

B. 2400

C. 2100

D. 1600

E. 800

*Thank you*