

GMAT Geometry Practice Paper 1

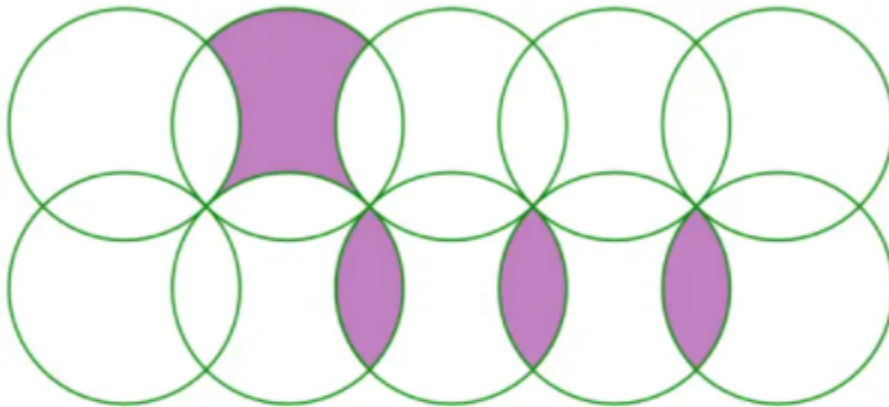
Problem 1

An equilateral triangle intersects a circle (not shown). The possible number of distinct intersection points could be the following:

- I. 3
- II. 4
- III. 5

- A. I only
- B. II only
- C. I and II only
- D. II and III only
- E. I, II, and III

Problem 2



Ten circles of radius $r = 6$ are equally spaced in a regular pattern as suggested by the diagram. What is the total area of the shaded regions?

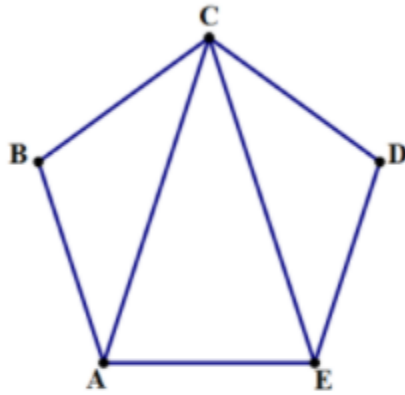
- A. 34π
- B. 36π
- C. 39π
- D. 40π
- E. 42π

Problem 3

Triangle STV (not shown) has sides $ST = TV = 17$, and $SV = 16$. What is the area?

- A. 85
- B. 100
- C. 120
- D. 136
- E. 165

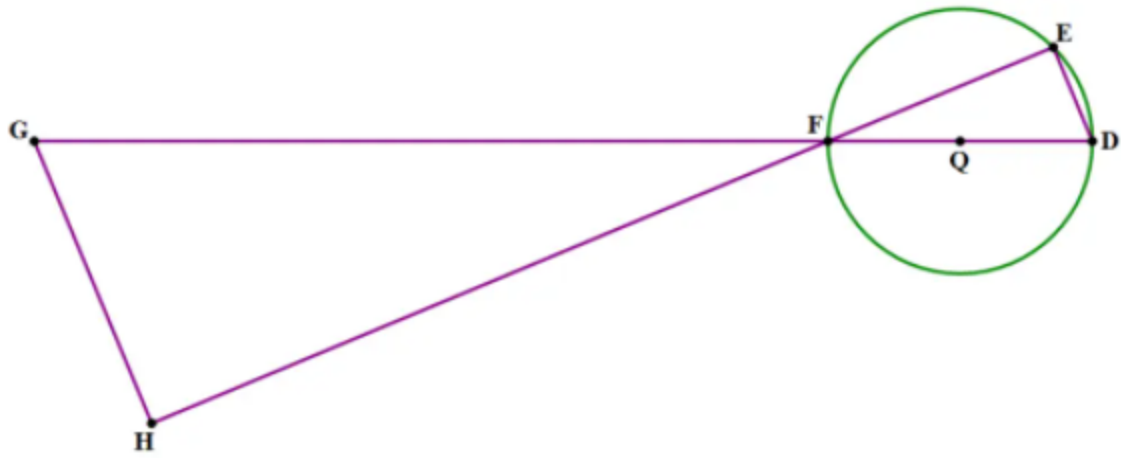
Problem 4



Given that ABCDE is a regular pentagon, what is the measure of $\angle ACE$?

- A. 24°
- B. 30°
- C. 36°
- D. 40°
- E. 45°

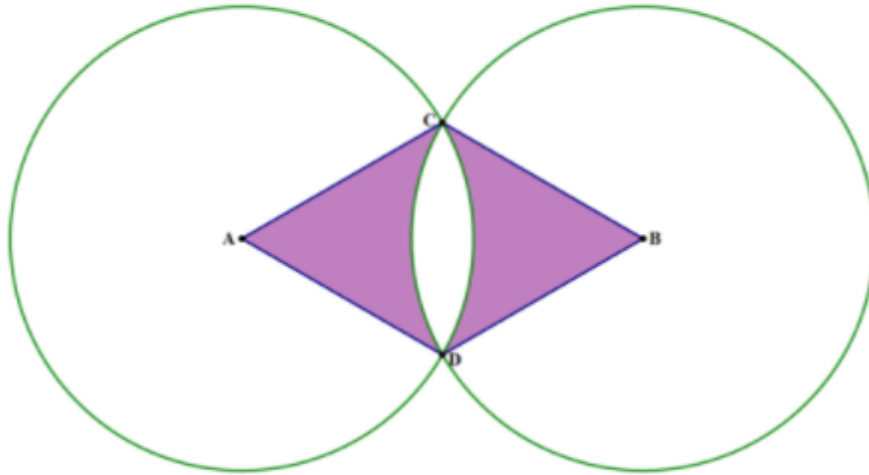
Problem 5



In the diagram above, ED is parallel to GH , and the circle has a diameter of 13. If $ED = 5$ and $GH = 15$, what is the area of triangle FGH ?

- A. 240
- B. 270
- C. 300
- D. 330
- E. 360

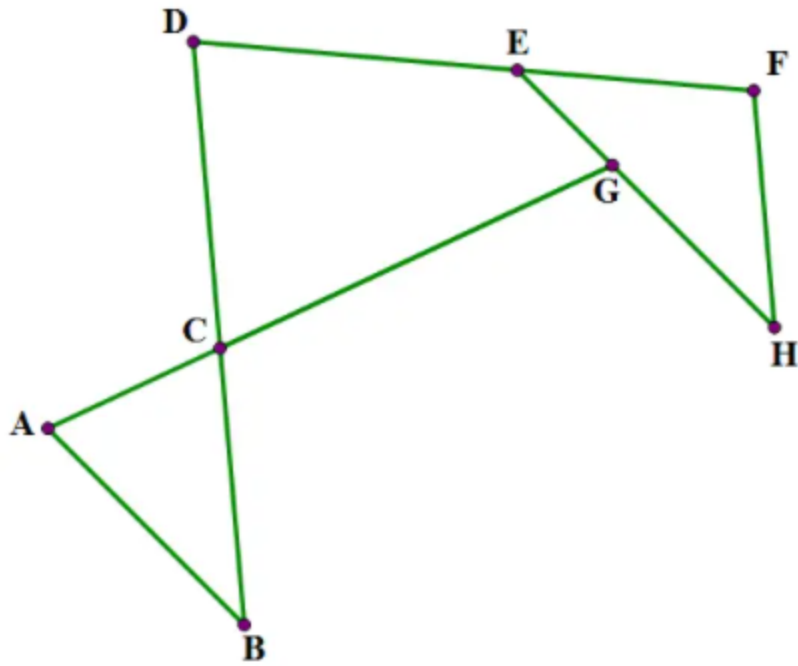
Problem 6



In the diagram above, A and B are the centers of the two circles, each with radius 6, and $\angle A = \angle B = 60^\circ$. What is the area of the shaded region?

- A. $12\pi - 18\sqrt{3}$
- B. $18\sqrt{3} - 6\pi$
- C. $24\pi - 36\sqrt{3}$
- D. $36\sqrt{3} - 12\pi$
- E. $36\pi - 72\sqrt{3}$

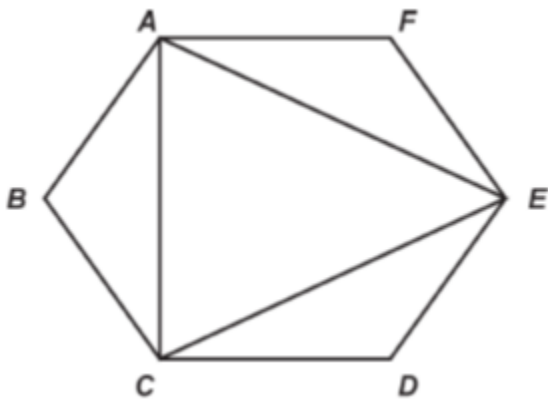
Problem 7



In the diagram above, AB is parallel to EH , and BD is parallel to FH . Also, $AB = BC$, and $EF = FH$. If $\angle EGC = 70^\circ$, then $\angle D =$

- A. 65°
- B. 70°
- C. 75°
- D. 80°
- E. 85°

Question 9 :



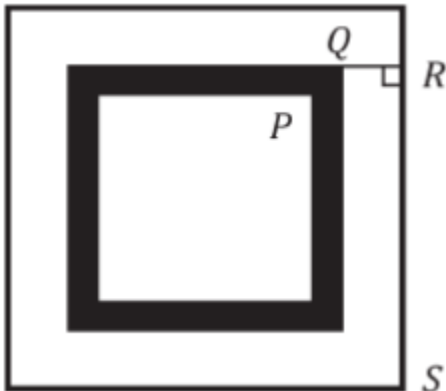
In the figure above, ABCDEF is a regular hexagon. If area of $\triangle ACE = 100\sqrt{3} \text{ cm}^2$ what is the area of the hexagon?

- (A) 150
- (B) $150\sqrt{3}$
- (C) 200
- (D) $200\sqrt{3}$
- (E) None of these

Question 10: What is the perimeter of an isosceles triangle PQR with integer sides if $PQ = 6 \text{ cm}$?

- I. $QR = 3 \text{ cm}$
- II. $PR < 4 \text{ cm}$

Question 11:

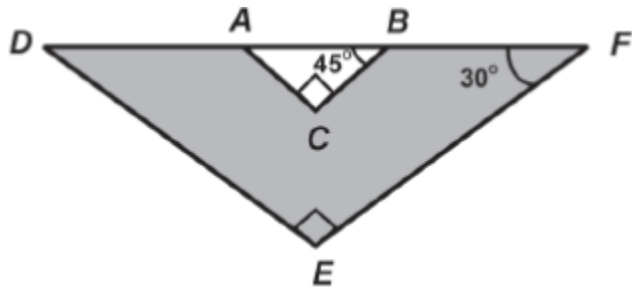


squares are placed one inside another, leaving a strip of uniform width around each square. If

$PQ = 2\sqrt{2}$ units, $QR = 2$ units and $RS = 10$ units, what is the area of the shaded region?

- (A) 16
- (B) 28
- (C) 32
- (D) 48
- (E) 64

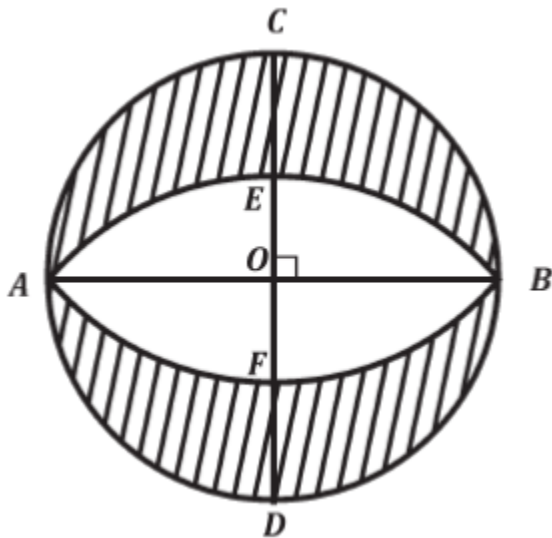
Question 12:



The figure above shows the setup of a park DEF where a concert has to be arranged. ABC represents the stage (and the shaded region represents the alley for attendees). If the area of the park is $72\sqrt{3}$ square metres, and $AB = BF = DA$, what is the area of the stage? (in square metres)

- (A) 4
- (B) 8
- (C) 10
- (D) 12
- (E) 16

Question 13:



In the figure above, AB and CD are diameters of the circle with centre as O. AEB is arc of circle with centre as D and AFB is an arc of the circle with centre as C. If AB = 20cm, what is the area of the shaded region?

- (A) 50
- (B) 100
- (C) 150
- (D) 200
- (E) 250

Question 14

Vertices of a quadrilateral ABCD are A(0, 0), B(4, 5), C(9, 9) and D(5, 4). What is the shape of the quadrilateral?

- A. Square
- B. Rectangle but not a square
- C. Rhombus
- D. Parallelogram but not a rhombus
- E. Kite

Question 15

What is the area of an isosceles triangle if two of its sides measure 6 and 12?

- A. $8\sqrt{5}$
- B. $15\sqrt{5}$
- C. $9\sqrt{15}$
- D. $9\sqrt{5}$
- E. $12\sqrt{5}$

Question 16

What is the measure of the radius of the circle that circumscribes a triangle whose sides measure 9, 40 and 41?

- A. 6
- B. 4
- C. 24.5
- D. 20.5
- E. 12.5

Question 17

If the sum of the interior angles of a regular polygon measures 1440° , how many sides does the polygon have?

- A. 10 sides
- B. 8 sides
- C. 12 sides
- D. 9 sides
- E. None of these

Question 18

What is the radius of the incircle of the triangle whose sides measure 5, 12 and 13 units?

- A. 2 units
- B. 12 units
- C. 6.5 units
- D. 6 units
- E. 7.5 units

Question 19

How many diagonals does a 63-sided convex polygon have?

- A. 3780
- B. 1890
- C. 3843
- D. 3906
- E. 1953

Question 20

If 10, 12, and 'x' are sides of an acute angled triangle, how many integer values of 'x' are possible?

- A. 7
- B. 12
- C. 9
- D. 13
- E. 11