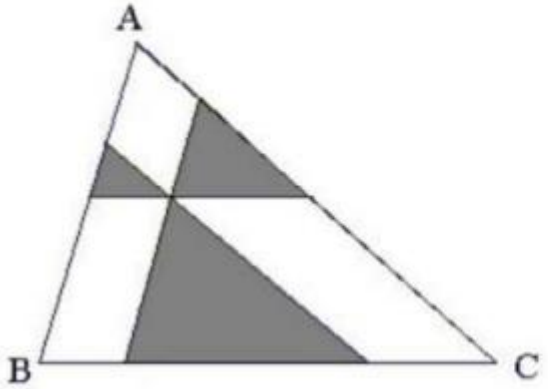
WEBINAR CLASSES FOR CAT

ELITES GRID

GEOMETRY ASSIGNMENT4 (TRIANGLE –MIXED TOPICS)

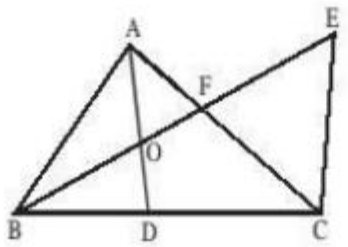
Free Practice tests – Click here

Q.1 Three lines are drawn parallel to each of the three sides of triangle ABC so that the three lines intersect in the interior of ABC. The resulting three smaller triangles have areas 1, 4, and 9. Find the area of triangle ABC.



.

Q2. In the figure given below, AB = 4 units, AC = 6 units, AD = 3 units, CF = 5 units, BD = DC and BF is extended till E such that BF = FE = 4 units. O is the point of intersection of AD and BF.



Find the measure of side CE.

a. $\sqrt{14}$ cm b. 4 cm c. 3.5 cm d. $2\sqrt{3}$ cm

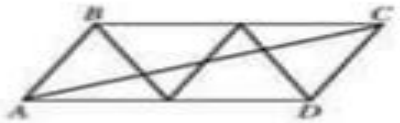
Q3. In triangle ABC, the internal angle bisector of $\angle A$ meets BC at point D. If AB = 8 cm, AD = 6 cm and $\angle BAC = 120°$, then what is the length of AC?

(a) 24 cm (b) 12 cm (c) $6\sqrt{3}$ cm (d) None of these

Q4

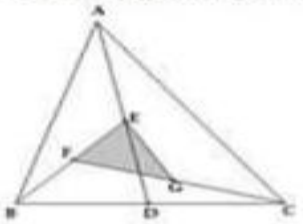
Parallelogram $ABCD$ is made up of four equilateral triangles of side length 1. The length of diagonal AC is

(A) $\sqrt{5}$ (B) $\sqrt{7}$ (C) 3
(D) $\sqrt{3}$ (E) $\sqrt{10}$

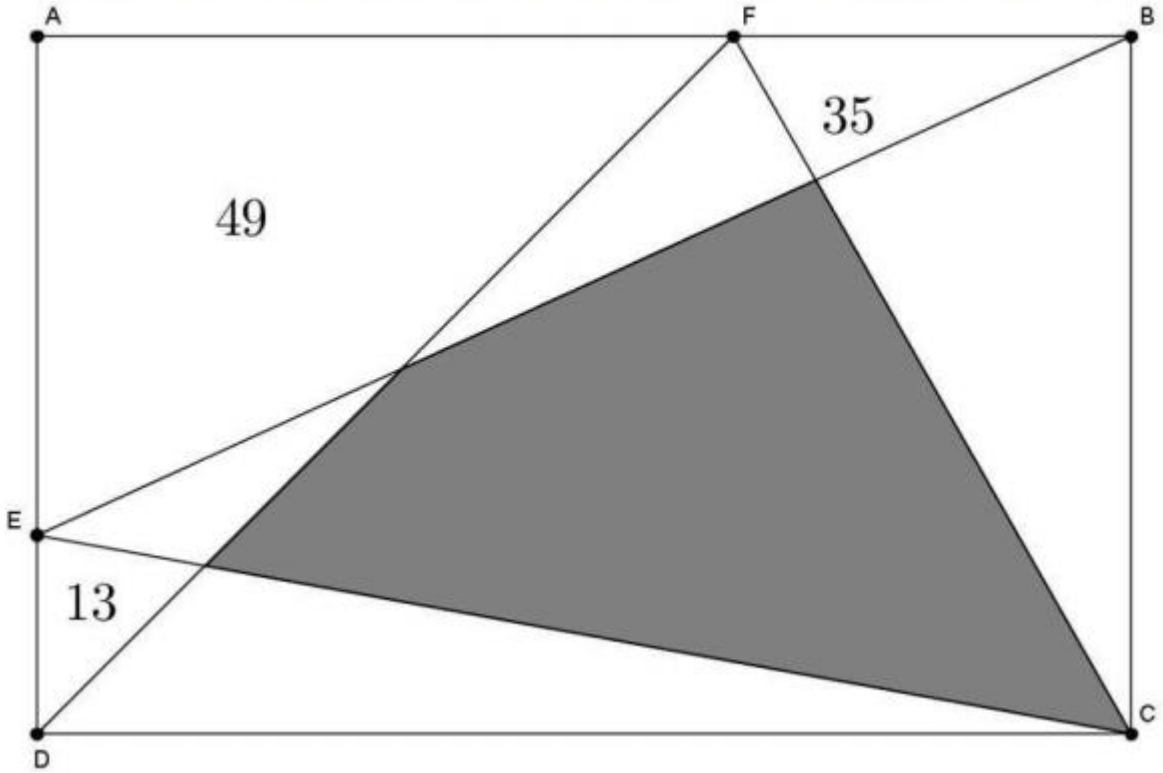


Q5. In ΔABC, AD is a median. E is mid point of AD, F is mid point of BE and G is midpoint of CF. The ratio of areas of ΔEFG to ΔABC is

(a) 5:39
(b) 4:31
(c) 3:37
(d) 2:16



Q6. Find the area of the shaded region, given the areas of three other regions.



Q7. Find the distance of the circum center to the vertex of a triangle with sides 20,21 and 29

Q8. If the sum of all altitudes of the triangle with sides 25,26 and 27 is represented as (a/b)(sqrt(c)) where a,b,c are integers,find a-bc

Q9 Determine the minimum value of the sum of inradius and circumradius of a right triangle with unit area

Q10. Two of the altitude of scalene triangle ABC have length 4 and 12 . If the length of third altitude is also an integer . find maximum value of third altitude.

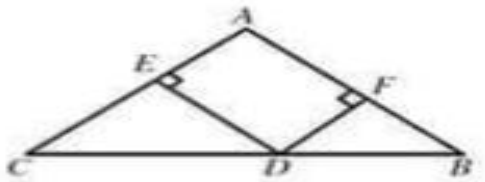
Q11. In a quadrilateral ABCD, it is given that angle A = 120°, angle B & D = 90°, AB = 13, AD =46, Find AC

Q12.

In ΔABC, $AC = AB = 25$ and $BC = 40$. D is a point chosen on BC. From D, perpendiculars are drawn to meet AC at E and AB at F. $DE + DF$ equals

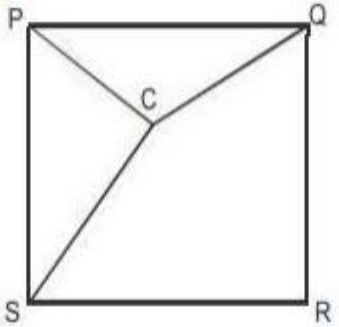
(A) 12 (B) 35 (C) 24

(D) 25 (E) $\frac{35}{2}\sqrt{2}$



Q13.

In the figure given below, C is a point inside the square PQRS. If PC = 6 m, QC = 8 m and SC = 10 m, then find the length of RC.



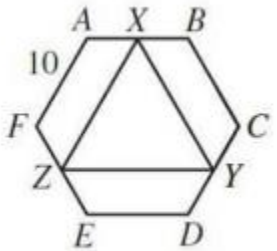
(a) $9\sqrt{2}$m (b) $8\sqrt{3}$m (c) $8\sqrt{2}$m (d) $9\sqrt{3}$m

Q14 ABCD is a trapezium where BC is parallel to AD. AD=16, BC=14 , AB=10 and CD=15 find sum of squares of diagonals

Q15. In a triangle ABC, AB = 8 units, BC = 10 units and CA = 12 units. AD is angle bisector of angle A and I is the incenter, find AI:ID

Q16

In the diagram, $ABCDEF$ is a regular hexagon with a side length of 10. If X, Y and Z are the midpoints of AB, CD and EF, respectively, what is the length of XZ?



Q17. The shortest median of a right-angled triangle is 25 units. If the area of the triangle is 336 sq.units, what is the length (in units) of the longest median of the triangle?

Q18. In a Δ PQR , PS is a median drawn from vertex P to QR . QT is internal angle bisector from Q to PR. PQ = 7 units , QR = 18 units , PT = TS . Find the side PR.

Q19 In triangle ABC, AC = 12. If one of the trisectors of angle B is the median to AC and the other trisector of angle B is the altitude to AC, find the length of the altitude.

Q20. Two of the sides of a triangle are in the ratio 3:4. The medians to these sides are perpendicular to each other. If the third side of the triangle is 12root(5), find the smaller of the first two sides of the triangle

Q21 The sides of a triangle measure 6, 10, and 14. Find the sum of the squares of the medians of the triangle. ?

Q22. In ΔABC, ∠A = 45◦ and ∠C = 30◦ . If altitude BH intersects median AM at P, then AP : PM = 1 : k. Find k.

Q23. In ΔABC , angle C = 90° and AB = 60. The medians AD and BE intersect at G (Centroid) . If theta is the the acute angle between the medians AD and BE whose tangent value is 1/3 , then the area of ΔABC is

Q24. In a triangle ABC, median AM is drawn such that it divides ∠BAC in the ratio 1:2. AM is extended to D such that ∠ABD = 90, Given AC=12 Find AD.

Q25. If the circumradius and the inradius of a right-angled triangle are 25 cm and 6 cm respectively, find the area of the triangle. (A) 168 sq.cm. (B) 336 sq.cm. (C) 294 sq.cm. (D) Cannot be determined

ANSWER KEYS

BEFORE CHECKING ANSWER KEYS – TRY QUESTIONS ATLEAST 2-3 TIMES

Free Practice tests – Click here

1) 36

2) Sqrt 14

3) 24

4) Sqrt 7

5) 2:16

6) 97

7) 14.5

8) 904

9) sqrt2

10) 5

11) 62

12) 24

13)8sqrt2

14) 773

15)2:1

16) 15

17) 48.5

18) 15

19) 3*sqrt3

20) 36

21) 249.

22) √3 / 2

23) 400

24) 24

25) 336