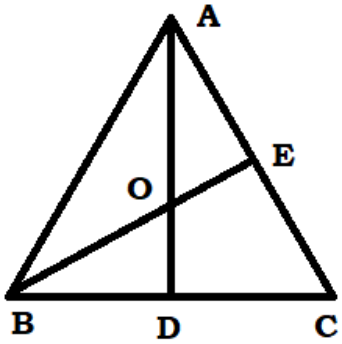
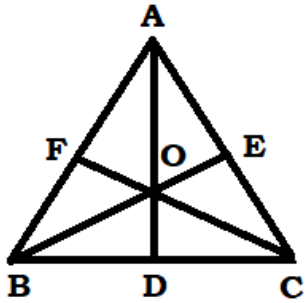
MASS POINT GEOMETRY

1.In the given figure AO : OD = 4 : 3 and BD : DC = 1 : 1 then find AE : EC = ?



A) 2 : 3 **B) 3 : 2** **C) 3 : 4** **D) 4 : 3**

2.In the given triangle, AO:OD=5:4,CO:OF=3:2.
Find BO:OE?



A) 45/11 **B) 42/9** **C) 38/7** **D) 32/7**

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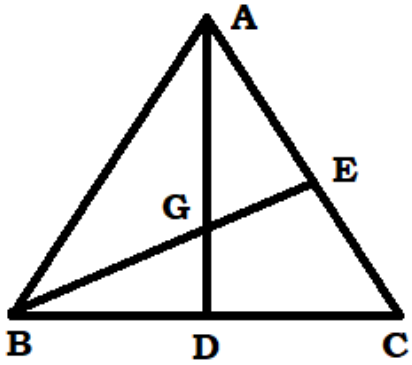
3.In the given figure AG : GD = 3 : 4 BD : DC = 4: 7 and AE = 24 then CE =?



A) 66 cm **B) 44cm** **C) 55cm** **D) 88cm**

4.In ΔABC, AD is the median of side BC. E is a point on side AC such that BE intersects AD at point O and AO:OD = 4 : 5. Find AE:EC =?

A) 4:7 **B) 2:5** **C) 4:9** **D) 1:3**

5.ABC is a triangle, D and E are the points on BC and AC respectively and 'O' is the intersection point of AD and BE such that AO:OD = 4 : 1, BD : DC = 2: 1 and AE : EC = 8 : 3 then find BO : OE?

A) 3 : 1 B) 5 : 3 C) 11 : 4 D) 7 : 5

QUADRILATERAL

1.In a quadrilateral ABCD, AC = 20cm, perpendiculars drawn from B and D to AC are 6cm and 8cm respectively then find the area of quadrilateral?

A) $280\ cm^2$ B) $140\ cm^2$ C) $70\ cm^2$ D) $210\ cm^2$

2.If the diagonals of a quadrilateral are 20cm and 25 cm and angle between them is 30° then find area of quadrilateral

A) $200\ cm^2$ B) $250\ cm^2$ C) $125\ cm^2$ D) $300\ cm^2$

3.If the diagonals of a quadrilateral ABCD intersect each other at 90° then which of the following is true

A) $AB^2 + CD^2 = BC^2 + AD^2$ B) $AB^2 + BC^2 = CD^2 + AD^2$

C) $AB^2 + BC^2 + CD^2 = AD^2$ D) None of these

4.If a quadrilateral having sides AB = 6, BC = 7, CD = 5 and diagonals intersect at 90° then find the length of AD =?

A) $3\sqrt{3}$ B) $5\sqrt{3}$ C) $4\sqrt{3}$ D) $2\sqrt{3}$

5. If a quadrilateral ABCD is circumscribed a circle if AB = 8.4, BC = 8.5, and CD = 9.2 then AD =?

A) 9.1 B) 8.9 C) 9.3 D) 9.4

SQUARE

1.If side of a square is 19cm then find the ratio of area of circumcircle to area of incircle of square?

A) $\sqrt{2} : 1$ B) $\sqrt{3} : \sqrt{2}$ C) 2 : 1 D) $\sqrt{3} : 1$

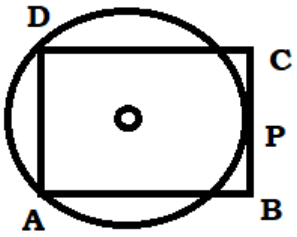
2.ABCD is a square X and Y are two points on AB such that AO = AX, BO = BY where O is the intersection of diagonal AC and BD. Find $\cot(\angle XOY)$?

A) 1 B) $\frac{1}{\sqrt{3}}$ C) $\sqrt{3}$ D) None

3.ABCD is a square and 'O' is the intersection point of diagonals. 'P' is a point on CD such that DP = DO then $\angle DOP : \angle POC = ?$

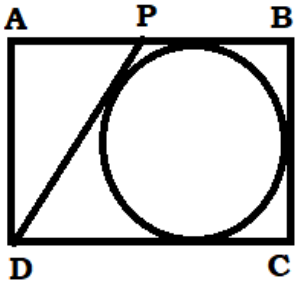
A) 3 : 2 B) 2 : 1 C) 3 : 1 D) 5 : 4

4.In the given figure, ABCD is a square of side 10cm. What is the value (in cm)of radius of circle?



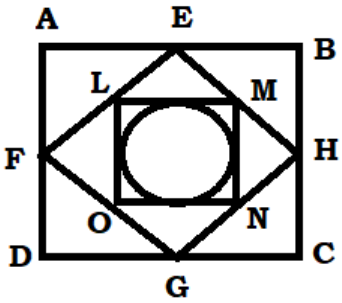
A) 4.25 **B) 5.75** **C) 6** **D) 6.25**

5.In the given figure ABCD is a square and 'P' is the mid point of AB. Side of square is 8 cm then find the radius of circle ?



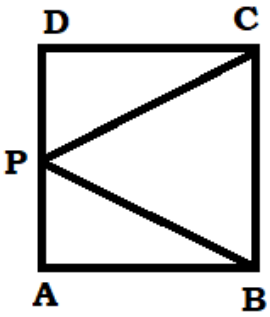
A) $\frac{8}{\sqrt{3}}$ **B)** $\frac{8}{\sqrt{5}+1}$ **C)** $\frac{16}{\sqrt{5}+1}$ **D)** $\frac{16}{3+\sqrt{5}}$

6.In the given figure, ABCD is a square, EFGH is a square formed by joining mid points of sides of ABCD. LMNO is a square formed by joining mid points of sides of EFGH. A circle is inscribed inside LMNO. If area of circle is $38.5\ cm^2$, then what is the area (in cm^2) of square ABCD?



A) 98 **B) 196** **C) 122.5** **D) 171.5**

7.In the given figure ABCD is a square whose side is 4cm. P is a point on the side AD. What is the minimum value (in cm) of BP + CP ?



A) $4\sqrt{5}$ B) $4\sqrt{3}$ C) $6\sqrt{3}$ D) $4\sqrt{6}$

8.ABCD is a square and BCE is an equilateral triangle inside the square. CE intersect BD at 'O' then $\angle BOC = ?$

A) 45° B) 75° C) 65° D) 54°

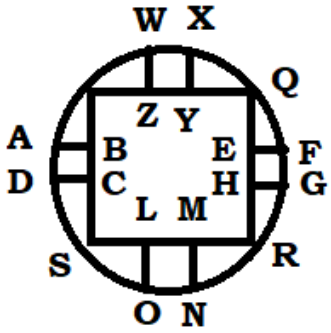
9.A square whose side is 2cm has its corners cut away so as to form an octagon with all sides equal. Then the length of each side of the octagon in metres is?

A) $\frac{\sqrt{2}}{\sqrt{2}+1}$ B) $\frac{2}{\sqrt{2}+1}$ C) $\frac{\sqrt{2}}{\sqrt{2}-1}$ D) $\frac{2}{\sqrt{2}-1}$

10. Points E, F, G, H lie on the side of AB, BC, CD and DA, respectively, of a square ABCD. If EFGH is also a square whose area is 62.5% of that of ABCD and CG is longer than EB, then the ratio of length of EB to that of CG is?

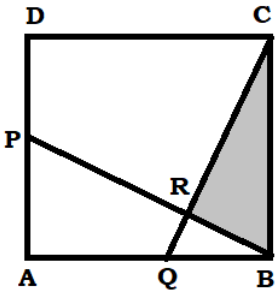
A) 1 : 3 B) 4 : 9 C) 2 : 5 D) 3 : 8

11. In the given figure radius of a circle is $14\sqrt{2}$ cm.
PQRS is a square. EFGH, ABCD, WXYZ and LMNO are 4 identical squares. What is the total area (in cm^2) of all small squares?



A) 31.36 B) 125.44 C) 62.72 D) 156.8

12. In square ABCD, two points P and Q are on side AD and AB respectively such that AP = 25 cm, PD = 15 cm and AQ : QB = 3 : 2.Find the area of shaded region (ΔBCR) ?



A) $288\ cm^2$ B) $256\ cm^2$ C) $240\ cm^2$ D) $192\ cm^2$

RECTANGLE

1. ABCD is a rectangle, AB : BC = 3 : 2. If E is the mid point of AB then $\sin \angle CEB = ?$

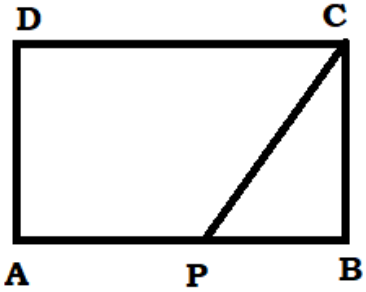
A) $\frac{4}{5}$ B) $\frac{3}{5}$ C) $\frac{5}{4}$ D) $\frac{4}{3}$

2. If l, b, p be the length, breadth and perimeter of a rectangle and b, l, p and in GP (in order), then l/b is

A) 2:1 B) $\left(\sqrt{3}-1\right):1$

C) $\left(\sqrt{3}+1\right):1$ D) $2:\sqrt{3}$

3. ABCD is a rectangle. P is a point on the side AB as shown in the given figure. If DP = 13, CP = 10 and BP = 6 then what is the value of AP



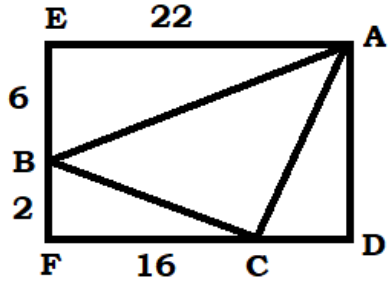
A) $\sqrt{105}$ B) $\sqrt{133}$ C) 10 D) 12

4. ABCD is a rectangle P and Q are two points on AB and AD such that area of ΔAPQ, ΔPBC and ΔCDQ are equal if BP = 2 cm then AP = ?

A) $\left(\sqrt{5}-1\right)$ B) $\sqrt{5}$ C) $2\sqrt{3}$ D) $\left(\sqrt{5}+1\right)$

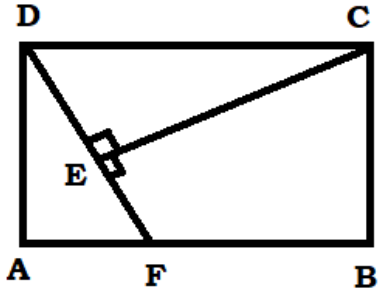
5. In the given figure, EADF is a rectangle and ABC is a triangle whose vertices lie on the side of EADF. AE = 22, BE = 6, CF = 16 and BF = 2 find the length of the line

joining the mid-points of the sides AB and BC ?



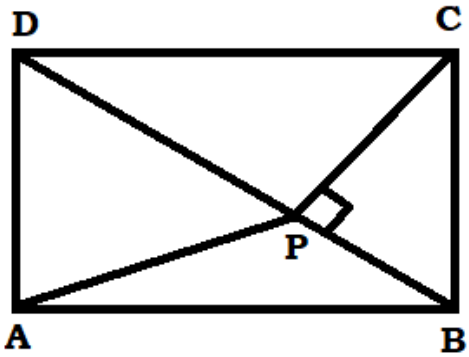
A) $4\sqrt{2}$ **B) 5** **C) 3.5** **D) 4.5**

6. In the given figure, ABCD is a rectangle. F is a point on AB and CE is drawn perpendicular to DF. If CE = 60 cm and DF = 40 m, then what is the area (in cm^2) of the rectangle ABCD?



A) 1200 **B) 1800** **C) 2400** **D) 2800**

7.In the figure. ABCD is a rectangle if DP = 8cm, PB = 2cm.
PC ⊥ DB. then find AP?



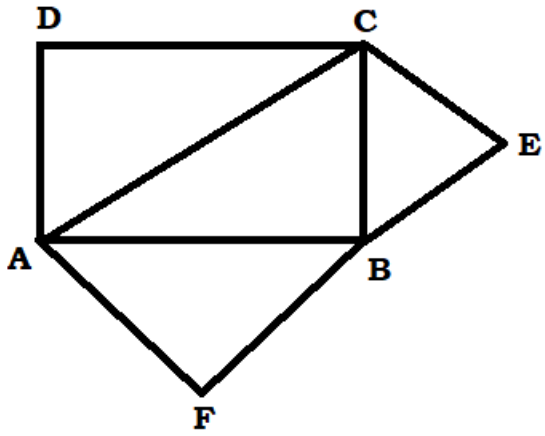
A) $4\sqrt{6}$ **B)** $2\sqrt{13}$ **C) 6** **D)** $\sqrt{57}$

8.PQRS is a rectangle in which PQ : QR = 3 : 1 and PR = 10 cm. What is the area of rectangle PQRS?

A) $15\ cm^2$ **B)** $20\ cm^2$ **C)** $30\ cm^2$ **D)** $45\ cm^2$

9. In the given figure ABCD and AFEC are two rectangles then find the ratio of area ΔAFB to area of ΔBCE, if

AB = 12 cm and BC = 9 cm

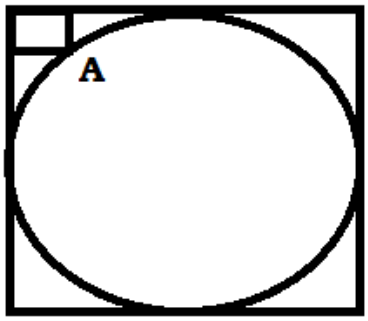


A) 4 : 3 B) 3 : 4 C) 16 : 9 D) 9 : 16

10. In a rectangle ABCD P is midpoint of AB and Q is midpoint of AD then find the ratio of area of ΔCPQ to area of rectangle ABCD?

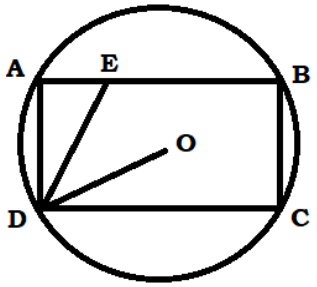
A) 3:8 B) 1:2 C) 2:5 D) 5:12

11. In the figure below, the rectangle at the corner measures 10cm × 20cm. The corner A of the rectangle is also a point on the circumference of the circle. What is the radius of the circle in cm?



A)30 cm B) 40 cm C) 50 cm D) 60 cm

12. In the figure ABCD is a rectangle inscribed inside a circle with center O. Side AB > Side BC. The ratio of the area of the circle to the area of the rectangle is $\pi : \sqrt{3}$.
also, $\angle ODC = \angle ADE$. Find the ratio AE : AD?



A) $1 : \sqrt{3}$ B) $1 : \sqrt{2}$ C) $2\sqrt{3} : 1$ D)

PARALLELOGRAM

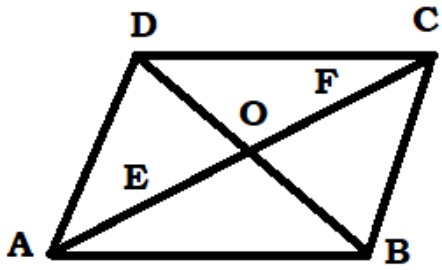
1.In a parallelogram sides are in the ratio 7:8 and the distance between the bigger sides is 56cm then find the distance between smaller sides

A) 64 B) 63 C) 42 D) 49

2.If the angles of a quadrilateral are in the ratio 5:9:5:9 then this quadrilateral must be

A) Square B) Trapezium C) Parallelogram D) Rhombus

3.In the adjoining figure ABCD is a parallelogram and E, F are the centroids of ΔABD and ΔBCD respectively, then EF equals

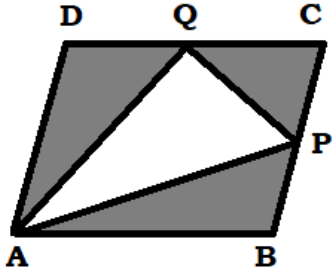


A) 1.5 AE B) BE C) CE D) $\frac{2}{3}$ AO

4.In a circle with center O, ACBO is a parallelogram where C is a point on the minor arc AB. What is the measure of $\angle AOB$?

A) 150° B) 135° C) 90° D) 120°

5.ABCD is parallelogram P and Q are the midpoints of BC and CD respectively. Find the ratio of shaded to unshaded area?

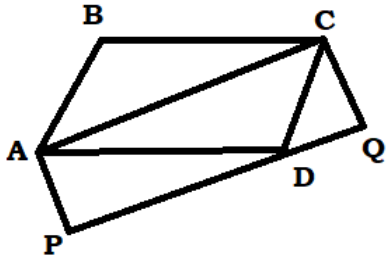


A) 7/4 B) 5/3 C) 3/2 D) 4/3

6.In the given figure ABCD and APDC are parallelogram.

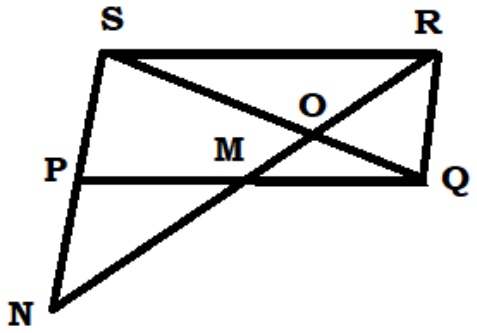
If the area of ΔABC and ΔDCQ are 24 and 11 respectively.

Find the area of ΔAPD?



A) 11 B) 13 C) 15 D) 18

7.In the following figure PQRS is a parallelogram M is the midpoint of PQ. SP are RM extent to point N. SQ and MR cut each other at point O. find the value of NO : OR.



A) 2:1 B) 3:1 C) 3:2 D) 5:2

8. $\square ABCD$ is parallelogram, AB = 14cm, BC = 18 cm and AC = 16 cm. Find the length of the other diagonal?
A) 24cm B) 28cm C) 30cm D) 32cm

9.PQRS is a parallelogram and its area is $300cm^2$ side PQ is extended to X such that PQ = QX. If XS intersects QR at Y, then what is the area (in cm^2) of triangle SYR ?
A) 75 B) 50 C) 120 D) 100

10. ABCD is a parallelogram 'N' is a point on BD, area of ΔANB is equal to $19.5\ cm^2$ then find the area of ΔBNC
A) $19.5\ cm^2$ B) $39\ cm^2$ C) $9.75\ cm^2$ D) None

11.The longer sides of parallelogram are 14.3cm and distance between them is 4.4cm. If the distance between shorter side is 5.2cm then find shorter side of parallelogram?
A) CND B) 9.9 cm C) 13 cm D) 12.1 cm

12. Adjacent sides of a parallelogram are 15cm and 24cm and angle between them is 120°. Find the length of the shorter diagonal.
A) $15\sqrt{3}$ B) $16\sqrt{2}$ C) 18 D) 21

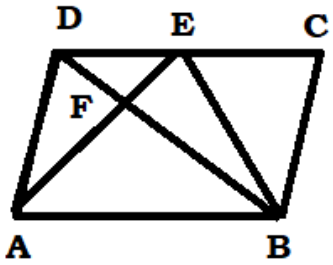
13. ABCD is a parallelogram in which AB = 20, BC = 34 and AC = 42. Find the area of parallelogram ABCD.
A) 672 B) 782 C) 824 D) 648

14. ABCD is a parallelogram in which P and Q any point on AB and CD respectively. If DQ : QC = 1 : 2 and AP : PB = 5 : 4 and area of $\Delta DOQ = 27cm^2$. Find the area of ΔADP (O is intersection point of BD and AQ)?
A) $225\ cm^2$ B) $120\ cm^2$ C) $135\ cm^2$ D) $180\ cm^2$

15.In a parallelogram ABCD of area $72\sqrt{3}$ sq cm, the sides CD and AD have lengths 9cm and 16cm, respectively. Let P be a point on CD such that AP is perpendicular to CD. Then the area (in sq cm) of triangle APD is ?

A) $32\sqrt{3}$ B) 48 C) 64 D) $18\sqrt{3}$

16. ABCD is a parallelogram. E is a point on side CD. If area $\Delta AFB = 22cm^2$ and area $\Delta BEC = 12cm^2$ then area $\Delta DEF = ?$



A) $9cm^2$ B) $17cm^2$ C) $5cm^2$ D) $10cm^2$

RHOMBUS

1.ABCD is a Rhombus, $\angle A = 60°$ and BD = 5 cm, then find the length of AC?

A) $5\sqrt{3}$ B) $10\sqrt{3}$ C) $\frac{15\sqrt{3}}{2}$ D) $\frac{13\sqrt{3}}{2}$

2.If perimeter of a Rhombus is 150cm length of one diagonal is 25 cm. Then find the area of Rhombus

A) $225\sqrt{2}$ B) $450\sqrt{2}$ C) $625\sqrt{2}$ D) $750\sqrt{2}$

3.Perimeter of a rhombus is 2p and sum of length of diagonal is m. find area of rhombus.

A) $\frac{1}{4}(m^2 - p^2)$ B) $\frac{1}{2}(p^2 - m^2)$ C) $\frac{1}{4}(2m^2 - p^2)$ D) $\frac{1}{4}(m^2 + p^2)$

4.ABCD is a rhombus with each side being equal to 8cm. If BD = 10cm, $AC = 2\sqrt{x}cm$, what is the value of $\sqrt{x+10}$?

A) $2\sqrt{3}$ B) $3\sqrt{2}$ C) 7 D) 5

5.ABCD is a Rhombus, a line passing through 'C' cut extended lines AD and AB at P,Q respectively. If $DP = \frac{AB}{3}$ then BQ : AB = ?

A) 1 : 1 B) 2 : 1 C) 3 : 2 D) 3 : 1

6.ABCD is a Rhombus, AB is produced of F, BA is produced to E such that AB = AE = FB, ED and FC are produced to meet at point O then find the value of $\angle EOF$?

A) 90° B) 120° C) 150° D) 135°

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TRAPEZIUM

1. ABCD is a trapezium in which AB || CD. AB = 20 cm, CD = 12 cm and distance between AB and CD is 10 cm then find the area of trapezium?

A) $150\,cm^2$ B) $175\,cm^2$ C) $135\,cm^2$ D) $160\,cm^2$

2. In a trapezium one diagonal divides the other in the ratio 2:9. If the length of the larger of the two parallel sides is 45 cm, then what is the length (in cm) of the other parallel side?

A) 10 B) 15 C) 18 D) 5

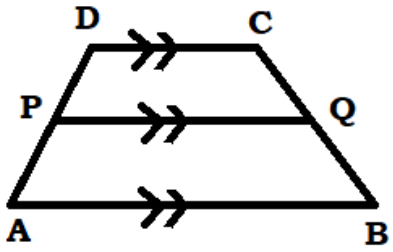
3. ABCD is a trapezium in which AB || DC and AB = 8cm, BC = 10 cm, CD = 12 cm, AD = 16 cm then $AC^2 + BD^2$ is equal to?

A) $458\ cm^2$ B) $448\ cm^2$ C) $546\ cm^2$ D) $548\ cm^2$

4. ABCD is a trapezium, AB || CD and AB : CD = 5:4, E and F are the mid points of AD and BC then find the ratio of area of $\square ABFE$ to $\square EFCD$?

A) 9:7 B) 19:17 C) 17:15 D) 15:13

5. In the given trapezium ABCD, DC||AB, P and Q are points on AD and BC respectively. AP:PD = 5:4, BQ:QC = 5:4, if DC = 11 cm, AB = 38 cm then find the value of PQ?



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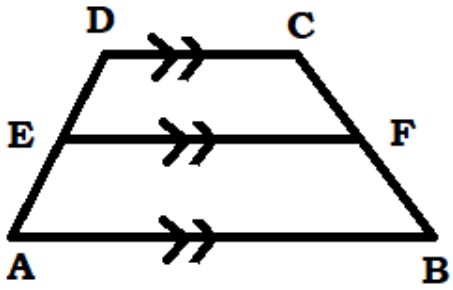
A) 19 cm B) 21 cm C) 23 cm D) 25 cm

6. ABCD is a trapezium in which AB || DC and its diagonals intersect at P. If AP = (3x – 1)cm, PC = (5x – 3)cm, BP = (2x +1)cm and PD = (6x – 5)cm, then the length of DB is?

A) 14cm B) 12cm C) 10cm D) 16cm

7. In the figure ABCD is a trapezium AB || EF || CD, AB = 20 cm and CD = 10 cm and $\frac{\text{area of EFCD}}{\text{area of ABCD}} = \frac{1}{4}$, then find the value of EF?



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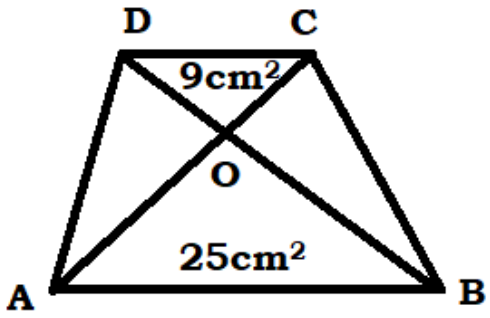
A) $7\sqrt{2}$ B) $7\sqrt{5}$ C) $5\sqrt{7}$ D) $3\sqrt{5}$

8. Find area of trapezium ABCD?



A) $64\ cm^2$ **B)** $68\ cm^2$ **C)** $60\ cm^2$ **D)** $56\ cm^2$

9. In the given figure, ABCD is a trapezium, AB || CD, AB = 38 cm, BC = 13 cm, CD = 24 cm and AD = 15 cm. Then find the area of trapezium ?

A) 456 **B)** 418 **C)** 372 **D)** 334

10. ABCD is a trapezium in which AB || CD and AB = 4CD. The diagonals of the trapezium intersects at O. What is the ratio of area of triangle DCB to the area ΔABO**?**

A) 1:4 **B)** 7:16 **C)** 3:8 **D)** 5:16

11. If ABCD is an osoceles trapezium AB || CD, BD = 15 and distance between AB and CD is 9cm then find area of trapezium?

A) $96\ cm^2$ **B)** $84\ cm^2$ **C)** $108\ cm^2$ **D)** $120\ cm^2$

12. If Area of an osoceles trapezium is $176\ cm^2$ **ratio of their parallels sides is 7:4, height is equal to 2/11 of sum of parallel sides then find the length of diagonal?**

A) $2\sqrt{137}$ **B)** $\sqrt{137}$ **C)** $\frac{\sqrt{137}}{4}$ **D)** $3\sqrt{137}$

13. ABCD is a cyclic trapezium. AB || CD and AB is diameter, BC = 2 and AB = 8 then CD =?

A) 7 **B)** 6 **C)** 5 **D)** 5.8

14. ABCD is a trapezium and diagonals intersect at 'O' area of ΔAOB **is** $84\ cm^2$**, AB = 2 CD and AB || CD then find area of** ΔCOD**?**

A) $42\ cm^2$ **B)** $12\ cm^2$ **C)** $21\ cm^2$ **D)** $27\ cm^2$

15. In a trapezium ABCD, AB || CD, BC = AD, AC = 20 cm and height is 12cm, then find the area of trapezium?

A) 180 **B)** 240 **C)** 192 **D)** 168

CHANDAN LOGICS
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