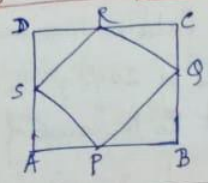
(A) → 2D FIGURES :-

1. (c)



$AB = BC = CD = DA = 20m$

$\therefore RC = CQ = 10\,m$

$\therefore RQ = \sqrt{10^2 + 10^2} = \sqrt{200}$

$\therefore$ Area $= (RQ)^2 = \boxed{200\,m^2}$

2. (c) $\pi R^2 = \pi\left[(20)^2 + (21)^2\right] \Rightarrow R^2 = 841 \Rightarrow \boxed{R = 29}$

3. (a) $\because\ 2(l+b) = 4a = 80$

$\Rightarrow (l+b) = 40$ and $a = 20$ → (i)

then, $a^2 = 400$

$\therefore$ According to the question:

$(a^2 - lb) = 100$

$\Rightarrow 400 - lb = 100$

$\Rightarrow lb = 300$

$\therefore (l-b)^2 = (l+b)^2 - 4lb$

$= (40)^2 - 4.300$

$= 400$

$\Rightarrow (l-b) = 20$ → (ii)

Now, Solving eqn (i) & eqn (ii); We get $\boxed{l = 30 \text{ and } b = 10}$

4. (a) Width of the road: $(R-r)$

Now; $2\pi R - 2\pi r = 88 \Rightarrow \cancel{2} \times \frac{22}{\cancel{7}}(R-r) = \cancel{88}$

$\Rightarrow (R-r) = \boxed{14}$

5. (a) Area of 1st Circle is $= \pi(4)^2 = 16\pi$

$\therefore$ Area of the 2nd Circle is $= (16 \times 16\pi) = 256\pi$

Let radious of the another Circle is r cm.

$\therefore \pi r^2 = 256\pi \Rightarrow r^2 = 256 \Rightarrow r = \boxed{16m}$

6. (c) Area of the Circle: πr^2

$\therefore \pi r^2 = 616$

$\Rightarrow \frac{22}{7} r^2 = 616$

$\Rightarrow r = 14$

D = Radious of the Semi-Circle = 28 cm

$\therefore$ Perimeter of the Semi-Circle :-

$(\pi r + 2r)$

$= r(\pi + 2)$

$= 28\left(\frac{22}{7} + 2\right)$

$= \left(\cancel{28}^{4} \times \frac{36}{\cancel{7}}\right) = \boxed{144\,cm}$

(A) :- 2D FIGURES :-

6. (d) Diagonal $= \sqrt{(l^2 + b^2)} = \sqrt{l^2 + (8)^2}$

$\Rightarrow D^2 = l^2 + 64 \Rightarrow l^2 = (17)^2 - (8)^2 = 225$

$\Rightarrow l = 15$; then Area $= lb = (15 \times 8) =$ **$120\,m^2$**

8. (c) Diagonal $= a\sqrt{2}$ [Here a = Side of the square]

$\therefore$ Here $a = 8\sqrt{2}$; then $D = (8\sqrt{2} \cdot \sqrt{2}) =$ **$16\,m$**

9. (b) Area of the ground $= (16 \times 10) = 160\,m^2$

$\therefore$ Total area (ground + Path) $= \{16 + (2.5 \times 2)\} \times \{10 + (2.5 \times 2)\}$

$= (21 \times 15) = 315\,m^2$

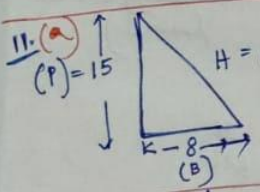
$\therefore$ Area of the path $= (315 - 160)\,m^2 =$ **$155\,m^2$**

10. (b) Area of the plot increased by :- $z = \left(x + y + \frac{xy}{100}\right)$

Here $x = y = 30\%$; then $z = 30 + 30 + \left(\frac{30 \times 30}{100}\right)$

$=$ **69%**

11. (a)



$\therefore H = \sqrt{(P)^2 + (B)^2}$

$= \sqrt{(15)^2 + (8)^2} = \sqrt{289} =$ **$17\,H$**

12. (d) Perimeter of the Square :- $2\{2(l+b)\} = 2\{2(10+4)\} = 56\,cm$

Side of the square $= \left(\frac{56}{4}\right) = 14\,cm$

$\therefore$ Radious of the Semi-Circle $= \left(\frac{14}{2}\right) = 7\,cm$

Circumference of the Semi-Circle : $(\pi r + 2r)$

$= r(\pi + 2)$

$= 7\left(\frac{22}{7} + 2\right) = \left(\frac{36}{7} \times 7\right)\,cm$

$=$ **$36\,cm$**

13. (c) $\therefore \frac{2}{1} \times \frac{22}{7} \times r = 132^{3} \Rightarrow r = 21$ cm.

Now Side of a square :→ 21 cm

$\therefore$ Length of the Rectangle :→ $\left(21 \times \frac{3}{5}\right) = \frac{63}{5}$ cm

Area of the Rectangle :→ $\left(\frac{63}{5} \times 15^{3}\right)$ cm^2 = 189 cm^2

17. (d) Let the Side of a square be x cm.

$\therefore 4x = 72 \Rightarrow x = 18$ cm

Now; the Smallest Side of the Right-angled triangle is: (18 - 13) = 5 cm

Let the length of the Rectangle is: l cm

$\therefore 8l = 112 \Rightarrow l = 14$ cm

Now; 2nd largest Side of the triangle is :- (14 - 2) = 12 cm

$\therefore$ Longer side of the triangle is → (H) = $\sqrt{(12)^2 + (5)^2}$ = 13 cm

15. (d) Area of the Park = (50×50) m^2 = 2500 m^2

Area of the Circular lawn :→ (Area of the Park) - (Area of the Park excluding Circular lawn)

= $(2500 - 1884)$ m^2 = 616 m^2

$\therefore$ Area of the Circular lawn :→ $\frac{22}{7} r^2 = 616$

$\Rightarrow r^2 = 28 \times 7$

$\Rightarrow r$ = 14 m

16. (c) Let the Side of the square is a cm.

$\therefore 4a = 160 \Rightarrow a = 40$

$\therefore$ Area of the square :- $(a)^2 = (40)^2 = 1600$ cm^2

According to the question: $1600 - lb = 600$

$\Rightarrow lb$ = 1000 cm^2

17. (d) Area of the Plot = $(4 \times 100)\ m^2 = 1600\ m^2$

Let Breadth = x m ; then Length = $4x$ m

Now area $\Rightarrow 4x^2 = 1600 \Rightarrow x^2 = 400 \Rightarrow x = 20$ m

$\therefore$ Length of the Plot = $4x = \boxed{80\ m}$

18. (c) The Perimeter of a [redacted] Rectangle = Circumference of the Circle

$\therefore \left(2 \times \frac{22}{7} \times 56^{8}\right) = (16 \times 22)$ cm

Let the length and breadth of a Rectangle is $6x$ and $5x$.

$\therefore$ According to the question: $\rightarrow 2(6x + 5x) = 16 \times 22$

$\Rightarrow 2 \times 11x = 16 \times 22^{2} \Rightarrow x = 16$

Then Smaller Side of the Rectance is: $\rightarrow 5x = (16 \times 5) = \boxed{80\ cm}$

19. (c) Area of the circle: $\rightarrow \frac{22}{7} r^2 = 5544 \Rightarrow r^2 = \left(\frac{5544^{252} \times 7}{22}\right)$

$\Rightarrow r^2 = 1764 \Rightarrow r = 42$ cm

Now; Circumference of the Circle = $\left(2 \times \frac{22}{7} \times 6\cancel{42}\right)$ cm = 264 cm

$\therefore$ According to the question:

$2\{2(l + 30)\} = 264^{66}$ [Here; l = Length of the [redacted] rectangle]

$\Rightarrow 2(l + 30) = 132$

$\Rightarrow l = 36$

$\therefore$ Area of the Rectangle is: $\rightarrow (36 \times 30) = \boxed{1080\ sq.cm}$

(A) :- 2D FIGURES :- <10>

20. (b) $L = 30$; Area $= 720$ sq. ft

$\therefore \quad 30 \times B = 720 \Rightarrow B = 24$ ft.

Length of the fencing $= (L + 2B) = \{30 + (2 \times 24)\} =$

21. (c) Let the length and breadth of a rectangle are l cm and b cm respectively.

According to the question: $2(l + b) = 120$

$\Rightarrow (l + b) = 60 \longrightarrow (i)$

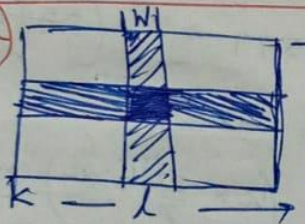
$(l - b) = 40 \longrightarrow (ii)$

Solving eqn (i) & eqn (ii); We get $l = 50$ m and $b =$

$\therefore$ Area of the square is :⟶ $500\ m^2$

Now; $a^2 = 500 \Rightarrow a = \boxed{10\sqrt{5}\ m}$

22. (a)



Area of the Roads :-

$[lW + bW] - W^2$

$= [(90 \times 10) + (50 \times 10)] - 100$

$= 1300\ m^2$

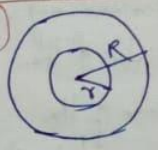
$\therefore$ Cost $= (1300 \times 8) = \boxed{₹10400}$

23. (d) Let the length and breadth of the rectangle are l cm and b cm.

$\therefore$ According to the question: $1.2l \times 0.8b = 192$

$\Rightarrow lb = \frac{192}{1.2 \times 0.8} =$ **200 m²**

24. (d)



Let Outer radious be R m and the inner radious be r m.

$\therefore$ According to the question:

$\frac{2\pi R}{2\pi r} = \frac{9}{8} \Rightarrow R = \left(\frac{9}{8}\right) r \longrightarrow$ (i)

Again; $(R-r) = 3 \longrightarrow$ (ii)

put the value of eqⁿ (i); in eqⁿ (ii); We get $\longrightarrow$

$R - r = 3$

$\Rightarrow \frac{9}{8}r - r = 3$

$\frac{r}{8} = 3$

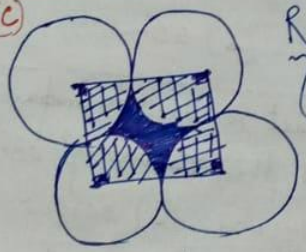
$\Rightarrow r = 24$

$R = 27$ m

$\therefore$ Diameter $= 2R$

$=$ **54 m**

25. (c)



Required Area :-

(Area of the square shown in the figure) $-$ (4 $\times$ Areas of $\frac{1}{4}$ parts of each circle)

$\therefore$ Required Area :- $(28 \times 28) - \left(4 \times \frac{1}{4} \times \frac{22}{7} \times 14 \times 14\right)$

$= \{28(28-22)\}$ cm²

$=$ **168 cm²**