Test-2B

1) $p = ab^2$ ; $q = a^3b$, LCM $(p, q)$ = —
(a) $ab$ (b) $a^2b^2$ (c) $a^3b^2$ (d) $a^3b^3$

2) LCM of $x$ and $y$ is 187. If $x > y$, then $2(x-y)$ = —
(a) 10 (b) 12 (c) 11 (d) 13

3) Discriminant of $6x^2 + bx + 2 = 0$ is 1, $b$ = —
(a) $-7$ (b) $\pm 7$ (c) $\pm 4\sqrt{3}$ (d) 0

4)


$AD = x$, $BD = x+1$, $AE = 3$cm, $EC = 5$cm
$x$ = — (a) 1.5cm (b) 1.8cm (c) 2.5cm (d) 3cm

5) If $\sec\theta \sin\theta = 0$, then $\theta$ = — (a) 30° (b) 45° (c) 90° (d) 0°

6) If $\theta = 30°$, then $3\sin\theta - 4\sin^3\theta$ = —
(a) 0 (b) 1 (c) 2 (d) 3

7) If AD and PM are medians and $\triangle ABC \sim \triangle PQR$, then
$\frac{AB}{PQ}$ = (a) $\frac{BC}{QR}$ (b) $\frac{AC}{PR}$ (c) $\frac{AD}{PM}$ (d) all of these

8) Area of a quadrant with radius 7cm is —
(a) $77/2$ cm$^2$ (b) $74/4$ cm$^2$ (c) $22/7$ cm$^2$ (d) $35/2$ cm$^2$

9) diameter of a wheel is 70cm. Find the no. of revolutions to cover 110 m.
(a) 70 (b) 45 (c) 60 (d) 50

10) If 18, $x$, $y$, $-3$ are in AP, then $x + y$ = —
(a) 12 (b) 15 (c) 16 (d) 11

11)


(a) $AC + AD = BD + CD$
(b) $AB + CD = BC + AD$
(c) $AC + AD = BC + BD$
(d) $AB + CD = AC + BC$

12) Diameters of Circle A and B are 16cm and 30cm resp. If area of circle C is sum of areas of other two circles,

then the circumference of the circle C is —

(a) $46\pi$ cm (b) $28\pi$ cm (c) $34\pi$ cm (d) $32\pi$ cm

13) mode = 12.4 ; mean = 10.5 , median = —

(a) 12 (b) 11.1 (c) 11.5 (d) 13

14)

| C.I | 0-6 | 6-12 | 12-18 | 18-24 | 24-30 |
|---|---|---|---|---|---|
| frequency | 7 | 5 | 10 | 12 | 6 |

Sum of lower limit of median class and the upper limit of modal class is —

(a) 30 (b) 36 (c) 24 (d) 12

(5) A box contains 54 marbles, blue, green and white.

$P(\text{blue ball}) = \frac{1}{3}$

$P(\text{green ball}) = \frac{4}{9}$

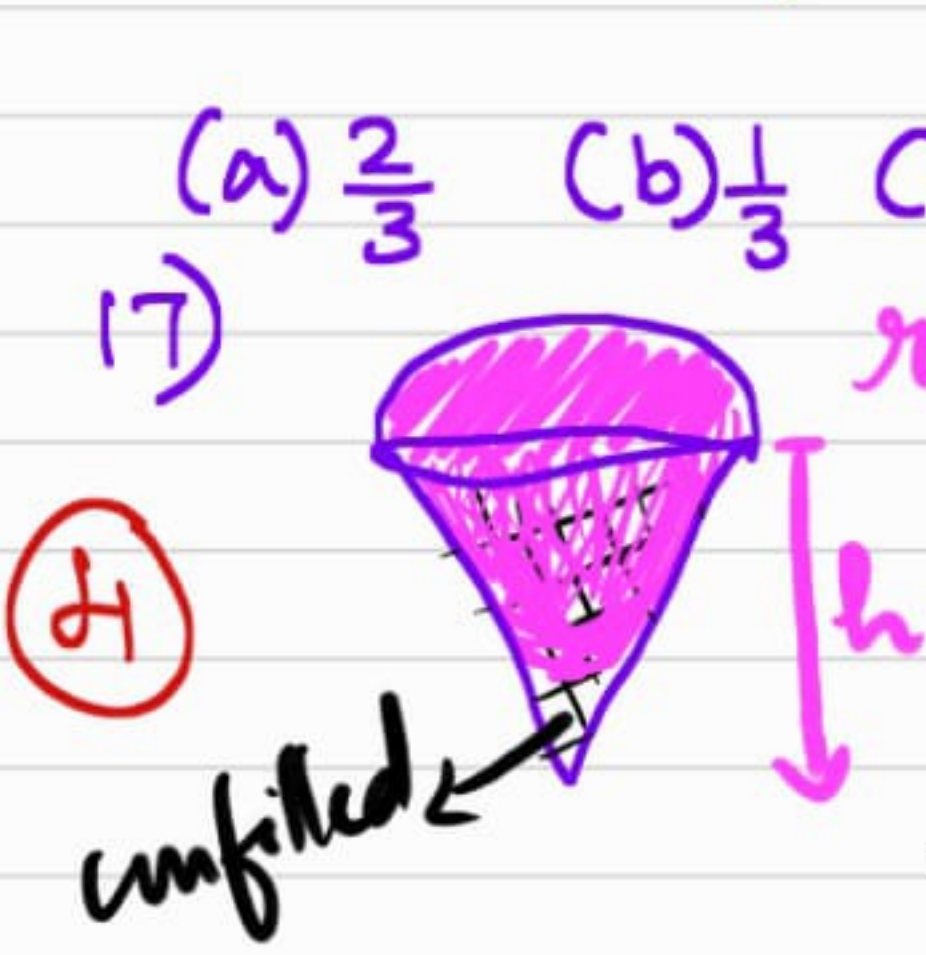
How many white marbles were there?

(a) 12 (b) 18 (c) 27 (d) 36

16) $4\tan\theta = 3$, then $\frac{4\sin\theta - \cos\theta}{4\sin\theta + \cos\theta}$ = —

(a) $\frac{2}{3}$ (b) $\frac{1}{3}$ (c) $\frac{1}{2}$ (d) $\frac{3}{4}$

17)




(H)

$(\frac{1}{6})^{th}$ of the volume of the lower part of the cone is unfilled. Find the volume of ice-cream ($\pi = 3.14$)

1) $LCM(p,q) = a^3b^2$ (c)

2) $187 = 11 \times 17$

$x = 17, y = 11$

$2(x-y) = 2(17-11) = 2 \times 6 = 12$ (b)

3) $a = 6, b = b, c = 2$

$b^2 - 4ac = 1$

$\Rightarrow b^2 - 4 \times 6 \times 2 = 1$

$\Rightarrow b^2 - 48 = 1$

$b^2 = 49$

$b = \pm 7$ (b)

4) $\frac{AD}{DB} = \frac{AE}{EC}$

$\Rightarrow \frac{x}{x+1} = \frac{3}{5}$

$\Rightarrow 5x = 3x + 3$

$2x = 3$

$x = \frac{3}{2} = 1.5cm$ (a)

5) $\sec\theta \sin\theta = 0$

$\frac{\sin\theta}{\cos\theta} = 0$

$\tan\theta = 0 \Rightarrow \theta = 0°$ (d)

6) $3\sin 30° - 4\sin^3 30°$

$= 3 \times \frac{1}{2} - 4 \times \left(\frac{1}{2}\right)^3$

$= \frac{3}{2} - \frac{4}{8} \times \frac{1}{2}$

$= \frac{3}{2} - \frac{1}{2} = \frac{2}{2} = 1$ (b)

7) all of these (d)

8) area $= \frac{1}{4}\pi r^2 = \frac{1}{4} \times \frac{22}{7} \times 7 \times 7 = \frac{77}{2} cm^2$ (a)

9) $r = 35cm$

distance $= 110m = 11000cm$

No. of revolutions $= \frac{\text{distance}}{\text{circumference}}$

$= \frac{11000}{2\pi r} = \frac{11000 \times 7}{2 \times 22 \times 35} = 50$ (d)

10) $x - 18 = y - x = -3 - y$

$x + y = -3 + 18 = 15$ (b)

11) $AB + CD = BC + AD$ (b)

12) $\pi r_1^2 + \pi r_2^2 = \pi R^2$

$R^2 = 8^2 + 15^2 = 64 + 225 = 289$

$R = 17cm$

Circumference $= 2\pi R$

$= 2\pi \times 17 = 34\pi cm$ (c)

13) mode $= 3$median $- 2$mean

$12.4 = 3\text{median} - 2 \times 10.5$

$12.4 + 21 = 3\text{median}$

$3\text{median} = 33.4$

median $\simeq 11.1$ (b)

14) modal class $= 18-24$

C.f $= 7 \mid 12 \mid \underline{22} \mid 34 \mid 40$

$\frac{n}{2} = 20$

median class $= 12-18$

Sum $= 12 + 24 = 36$ (b)

15) $P(\text{white}) = 1 - \left(\frac{1 \times 3}{3 \times 3} + \frac{4}{9}\right) = 1 - \frac{7}{9} = \frac{2}{9}$

$\frac{x}{54} = \frac{2}{9}$

$x = \frac{2 \times 54^6}{9_1} = 12$ (a)

16) $\div \cos\theta \Rightarrow \frac{4\tan\theta - 1}{4\tan\theta + 1} = \frac{3-1}{3+1} = \frac{2}{4}$

$= \frac{1}{2}$ (c)

17) 

$r = 3cm$

$h = 12cm$

volume of ice-cream

$= V_{hemisphere} + \frac{5}{6} \times V_{cone}$

$= \frac{2}{3}\pi r^3 + \frac{5}{6} \times \frac{1}{3}\pi r^2 h$

$= \frac{1}{3}\pi r^2 \left(2r + \frac{5}{6}h\right)$

$= \frac{1}{3_1} \times 3.14 \times 9^3 \left(6 + \frac{5}{6_1} \times 12^2\right)$

$= 3.14 \times 3 \times 16 = \underline{150.72 cm^3}$