

QUANTITATIVE ABILITY									
1	a	2	c	3	a	4	d	5	a
6	a	7	c	8	a	9	a	10	b
LRDI									
1	b	2	c	3	a	4	b	5	a
6	c	7	c	8	d	9	d	10	a
VERBAL ABILITY									
1	b	2	c	3	d	4	b	5	c
6	a	7	c	8	b	9	c	10	a

QUANTITATIVE ABILITY

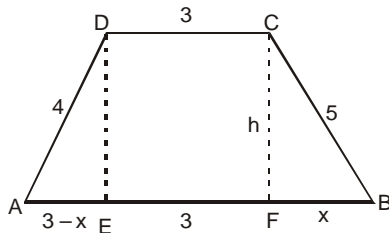
1. a If n is number of magazines, $300 \times 5 = n \times 60$

2. c $\frac{1}{3}a = \frac{1}{4}b = \frac{1}{5}c = \frac{1}{6}d = k$, say

$a = 3k, b = 4k, c = 5k, d = 6k$

Thus, a, b, c and d are in AP with common difference k.

3. a



$$h^2 = 16 - (3-x)^2 = 25 - x^2$$

$$\Rightarrow 16 - 9 + 6x - x^2 = 25 - x^2$$

$$\Rightarrow x = 3 \text{ so, } h = 4$$

$$\text{Area} = \frac{1}{2}(6+3) \times 4 = 18 \text{ cm}^2$$

4. d $x^2 - y^2 = 286$

$$\therefore (x+y)(x-y) = 286$$

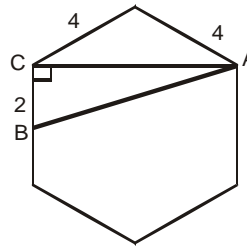
Now 286 can be factored as $2 \times 11 \times 13$ and would have 8 factors.

i.e. 1, 2, 11, 13, 22, 26, 143, 286

286 can be written as product of two integers in 4 ways $1 \times 286, 2 \times 143, 11 \times 26, 13 \times 22$.

In all these ways, one is even and other odd whereas $(x+y)$ and $(x-y)$ both will be either even or both odd. Why? If x & y are both even or both odd, then the sum and difference will be even. If one of x and y is even and the other is odd, then the sum and difference both will be odd. Thus there is no integral solution to $x^2 - y^2 = 286$.

5. a



$AC = 2 \times \text{Height of equilateral triangle formed by side}$

$$\text{with centre} = 2 \times \frac{\sqrt{3}}{2} \times 4 = 4\sqrt{3}$$

$$\therefore AB = \sqrt{16 \times 3 + 4} = \sqrt{52} = 2\sqrt{13}$$

6. a

Observe that $\triangle XYZ$ is a right-angled triangle because 63, 16 and 65 form a Pythagorean triplet.

$$\text{Then, } \left(\frac{1}{2}\right) \times XP \times 65 = \left(\frac{1}{2}\right) \times 63 \times 16$$

$$\Rightarrow XP = 15.5 \text{ (approximately)}$$

7. c

(i) If $(V+1)^2$ is greater than $5V-1$,

$$V^2 + 2V + 1 > 5V - 1$$

$$\text{or } V^2 - 3V + 2 > 0$$

$$\text{or } (V-1)(V-2) > 0$$

$$\text{or } V < 1 \text{ or } V > 2 \quad \dots (i)$$

(ii) If $(V+1)^2$ is less than $7V-3$,

$$V^2 + 2V + 1 < 7V - 3$$

$$\text{or } V^2 - 5V + 4 < 0$$

$$\text{or } (V-4)(V-1) < 0$$

$$\text{or } 1 < V < 4 \quad \dots (ii)$$

There is only one integer ($V = 3$) that satisfies (a) as well as (b) and hence option (c).



8. a $4x^2 + Kx + 9 = 0$.

Roots are $\frac{-K \pm \sqrt{K^2 - 144}}{8}$

Difference = $\frac{\sqrt{K^2 - 144}}{4} \Rightarrow K = 20$

9. a Let A be the event of getting at least 3 defectives out of 8 examined rackets.
B be the event of getting 9th racket as defective.

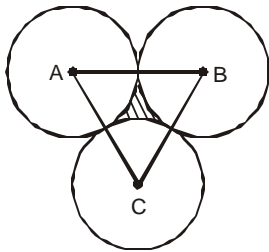
\therefore Required probability = $P(A \cap B) = P(A)P\left(\frac{B}{A}\right)$

Now $P(A) = \frac{{}^4C_3 \times {}^{11}C_5}{{}^{15}C_8}$

$P\left(\frac{B}{A}\right) = \frac{1}{7}$

\therefore Required probability = $\frac{{}^4C_3 \times {}^{11}C_5}{{}^{15}C_8} \times \frac{1}{7} = \frac{8}{195}$

10. b



$\triangle ABC$ is an equilateral triangle.

Area = $\frac{\sqrt{3}}{4} \times 4^2 = 4\sqrt{3}$

So, area of shaded portion = $4\sqrt{3} - 3\left(\frac{60^\circ}{360^\circ} \times \pi \times 2^2\right)$
 $= 4\sqrt{3} - 2\pi$

Thus, volume = $(4\sqrt{3} - 2\pi)8$.

$= 16(2\sqrt{3} - \pi)$

LRDI

1. b Mumbai — 200, Delhi — 150, Kolkata — 100 and Chennai — 50

$= 200 + 150 + 100 + 50 = 500$

2. c Number of families with no children = 75

Number of families with one child = 75

Number of families with two children = 50

Number of families with three children = 150

Thus the number of children = $75 + 100 + 450 = 625$.

3. a $\frac{140}{300} \times 100 = 46.66\%$

4. b Total number of students during the period

$= 5000 + 6000 + 7200 + 8640 = 26,840$

So, $\frac{26840}{4} = 6710$

5. a Number of students in 1996-97 = $(1.3) \times 8640 = 11,232$

Number of additional students = $11232 - 8640 = 2,592$

So, total number of engineering students in 1996-97

$= (0.5) \times 2592 + (0.39) \times 8640 = 4,666$

Average annual growth rate

$= \frac{(4666 - 1750)}{(1750)} \times \frac{1}{4} \times 100 = 41.6\%$

6. c It is given that Z is granddaughter of M.

It gives us the information that A and B have only 2 children, P and Q of opposite sexes.

It is given that Q is A's son and Q has only one daughter and Y is the niece of P. So Y is the only daughter of Q.

Now as I says that M is daughter-in-law of A. So M is Q's wife. So Z is granddaughter of Q also. So mother of Z is Y.

7. c A is very poor in hockey and cricket, so B, C and D must be a hockey player and a cricket player.

Statement I says that C is a hockey player. So B or D must be cricket player.

Statement II, says that D cannot play cricket so B plays cricket.

8. d $\frac{31.7 - 24.9}{24.9} \times 100 = \frac{6.8}{24.9} \times 100 = 27.30$



9. d Answer cannot be determined, since the total number of voters in 1998 is not known.
10. a MNF, Congress as it is evident from the table.

VERBAL ABILITY

1. b The first blank has to be pregnant, as that is suggested in the sentence within the hyphens, that it cannot be seen. Moreover, the second has to be blocks out as that sentence elaborates the fact that the viewer cannot see.
2. c The second part can be either 'went against' or 'shrugged off'. It is obviously negative as they did it contemptuously. At the same time, 'vetoed' does not fit here. But, doubts cannot be eliminated; they can be removed. The answer is obviously not 'b' and 'd' as doubts cannot be reinforced. If doubts exist they exist, there can never be any reinforcement of doubts, they can just be confirmed as truths or be eliminated.

The answer is obviously not 'b' and 'd' as doubts cannot be reinforced. If doubts exist they exist, there can never be any reinforcement of doubts, they can just be confirmed as truths or be eliminated.

So the answer is (c).

3. d A and C quote common complaints. D exclaims with support from BE.
4. b EB begins, of course! C should follow D – *Smiley ... also speaking out.*
5. c C starts the paragraph. E is actually a conclusion. The *problem* in D is stated in B.
6. a *denizen* means *native*.
7. c You find exotic beauties in these islands.
8. b A motif is an underlying theme.
9. c (c) is the grammatically correct sentence. *laid off* is a common expression.
10. a (a) makes the most meaningful sentence.



