

CLASS - VII

01)	A	(11)	C	(21)	A	(31)	A	(41)	C	(51)	- 625
02)	D	(12)	C	(22)	C	(32)	C	(42)	A	(52)	33
03)	C	(13)	B	(23)	D	(33)	B	(43)	D	(53)	441
04)	C	(14)	D	(24)	C	(34)	B	(44)	A	(54)	increases by 300%
05)	D	(15)	B	(25)	C	(35)	C	(45)	C	(55)	Rs. 40
06)	C	(16)	B	(26)	A	(36)	C	(46)	A	(56)	5 ⁰
07)	D	(17)	C	(27)	B	(37)	C	(47)	d	(57)	Monday
08)	B	(18)	D	(28)	A	(38)	D	(48)	D	(58)	8
09)	B	(19)	A	(29)	C	(39)	D	(49)	B	(59)	37.5
10)	C	(20)	B	(30)	B	(40)	B	(50)	A	(60)	613

01) A) $5 : 4 ; 2\sqrt{a} - 2\sqrt{b} = \sqrt{a} + \sqrt{b} \Rightarrow$

$$\sqrt{a} = 3\sqrt{b} \Rightarrow \frac{\sqrt{a}}{\sqrt{b}} = 3 \Rightarrow \frac{a}{b} = 9 \Rightarrow \frac{a}{b} + 1 = 10 \Rightarrow \frac{a+b}{b} = 10 ; \frac{a}{b} - 1 = 8 \Rightarrow \frac{a-b}{b} = 8 ; \frac{a+b}{a-b} = 5$$

02) D) pq

03) C) $S = \frac{2V(r+h)}{rh}$

04) C) $-ax^2 - bx ;$

05) D) $abc ; \frac{\frac{a+b+c}{\frac{1}{ab} + \frac{1}{bc} + \frac{1}{ca}}}{\frac{a+b+c}{abc}} = abc$

06) C) $4 ; x^4 + \frac{1}{x^4} + 2 = 324 \Rightarrow x^2 + \frac{1}{x^2} = 18 \Rightarrow x^2 + \frac{1}{x^2} - 2 = 16 \Rightarrow x - \frac{1}{x} = 4$

07) D) $17 ; 4^{61}(1+4+4^2+4^3) = 4^{61}(85) = 4^{61} \times 5 \times 17$

08) B) $0.\bar{6} ; 0.\bar{4} = \frac{4}{9} \Rightarrow \sqrt{\frac{4}{9}} = \frac{2}{3} = 0.\bar{6}$

09) B) $50^0 ; \angle B = \angle C \angle B = \angle C \Rightarrow \angle A : \angle B = 8 : 5 \Rightarrow \angle A + \angle B + \angle C = 8x + 5x + 5x = 180$
 $x=10 ; \text{angle B is } 50$

10) C) $24 \text{ cm} ; s_1 = \frac{40}{4} = 10, s_2 = \frac{32}{4} = 8 \Rightarrow A_3 = A_1 - A_2 \Rightarrow A_3 = 36 \Rightarrow P_3 = 24$

11) C) $1.5 ; a-b=c+d+6 \text{ ---->(I)} ; a+b=c-d-3 \text{ ----->(II)}$ add (I) and (II) $a-c=1.5$

12) C) $120 ; A = 2(B + C), C = (1/4)A \Rightarrow A+B+C=2(B+C)+B+C=180 \Rightarrow B+C=60 \Rightarrow A=120.$

13) B) $13 ; abc = 385, bcd = 1001, \frac{abc}{bcd} = \frac{385}{1001} = \frac{77 \times 5}{77 \times 13} \Rightarrow \frac{a}{d} = \frac{5}{13} \Rightarrow d = 13$

14) D) $37 ; \text{sum of four sister's age} = 28 ; \frac{28+x}{5} = 7+6 \Rightarrow x = 65 - 28 = 37$

15) B) $9 \text{ years} ; \text{rama} = x, \text{rajan} = 2x-2 = 16 \Rightarrow 2x = 18 \Rightarrow x=9$

16) B) $x/(x-2)$

17) C) $24\sqrt{2} ; d = \sqrt{2} s = 12 \Rightarrow s = 6\sqrt{2} \Rightarrow p = 4s = 24\sqrt{2}$

- 18) D) 38 ; $10 \times 7 - (\frac{1}{2} \times 6 \times 7 + \frac{1}{2} \times 4 \times 4 + \frac{1}{2} \times 2 \times 3) = 70 - 32 = 38$
- 19) A) 6 ; $2(4 \times 4 + 4x + 4x) = 128 \Rightarrow 16 + 8x = 64 \Rightarrow x = 6$
- 20) B) 25π b is the hypotenuse. circumradius = $b/2 = 5 \Rightarrow$ area = 25π
- 21) A) 35 ;
- 22) C) 255 ; $\frac{32}{2} = 16 \Rightarrow 16 \times 16 = 256$ (Even) $\Rightarrow 15 \times 17 = 255$
- 23) D) 17 ; $\frac{\sqrt{2100}}{\sqrt{7}} = \frac{\sqrt{7} \times \sqrt{300}}{\sqrt{7}} = 10\sqrt{3} = 10 \times 1.732 = 17.32$
- 24) C) $4\sqrt{3}$; $h = \frac{\sqrt{3}}{2}s \Rightarrow s = \frac{2 \times 2\sqrt{3}}{\sqrt{3}} = 4 \Rightarrow \frac{\sqrt{3}}{4}s^2 = \frac{\sqrt{3}}{4} \times 16 = 4\sqrt{3}$
- 25) C) 3^{103} ; $3^{102} + 3^{102} + 3^{102} = 3^{102}(1+1+1) = 3^{103}$
- 26) A) 64π ; $C_1 = 8\pi \Rightarrow 2\pi r = 8\pi \Rightarrow r = 4 \Rightarrow R = 8 \Rightarrow A = 64\pi$
- 27) B) 7 ; $213ab/100$ remainder $ab < 10$ therefore $a=0 \Rightarrow 2+1+3+0+b=13 \Rightarrow b=7$
- 28) A) an infinite number of solutions.
- 29) C) irrational
- 30) B) A+B is a zero polynomial.
- 31) A) $5/12$; $x+y = \sqrt{(x-y)^2 + 4xy} = \sqrt{4+96} = 10$; $\frac{1}{x} + \frac{1}{y} = \frac{x+y}{xy} = \frac{10}{24} = \frac{5}{12}$
- 32) C) 121 ; $(2a)^2 - 2 \times 2a \times 3b + (3b)^2 \Rightarrow x = 12 \Rightarrow (x-1)^2 = 121$
- 33) B) $a = 0, b \neq 0, c = 0$
- 34) B) 55 ; $\angle A + \angle B + \angle C = 180 \Rightarrow 33 + \angle B + \angle B + \angle B - 18 = 180 \Rightarrow \angle B = 55$
- 35) C) Circumcentre PCB is a right triangle and A is midpoint of BP
- 36) C) 30
- 37) C) Square
- 38) D) I & III
- 39) D) Parallelogram
- 40) B) $1.2 \text{ m}, 1.6 \text{ m}, 1.2 \text{ m}$ $\frac{4}{3}a + a + a = 400 \Rightarrow a = 120 \text{ cm} = 1.2 \text{ m}$
- 41) C) 2 ; $x+y = z+z \Rightarrow x-z = z-y \Rightarrow \frac{x}{z-y} + \frac{y}{y-z} = \frac{-x+y}{y-z} = \frac{-2z+y+y}{y-z} = 2$
- 42) A) $3;2$ or $2:3$ $6a^2 - ab = 6(2ab - 6a^2 - ab) \Rightarrow 6a^2 - 13ab + 6b^2 = 0 \Rightarrow \frac{a}{b} = \frac{2}{3}$ or $\frac{3}{2}$
- 43) D) $-1/2$; $\frac{(m^7+1)(m^7-1)}{(m^7-1)} = \frac{127}{128} \Rightarrow m^7 = \frac{-1}{128} \Rightarrow m = \frac{-1}{2}$
- 44) A) 144 $s^3 = 6s^2 \Rightarrow s = 6 \Rightarrow 4s^2 = 144$
- 45) C) a^{18} ; $\sqrt{a^{1+2+\dots+8}} = \sqrt{a^{36}} = a^{18}$

- 46) A) $a+2$; $(a+a+1+a+2+a+3+a+4)/5 = a+2$
- 47) D) 5 ; $(x^2 - 1)^2 = 64 \Rightarrow (x^2 - 1) = 8 \Rightarrow x^2 = 9 \Rightarrow x = 3 \Rightarrow \frac{16+4}{4} = 5$
- 48) D) 8 ; $(1 \times 0 + 0 \times 2 + 2 \times 1)^{1+0+2} = 2^3 = 8$
- 49) B) square
- 50) A) 0
- 51) -625 ; multiply by - 5
- 52) 33 is wrong go on adding 7, 9, 11, 13, 15, 17 to obtain the next number
- 53) 441 ; all others are squares of prime numbers
- 54) area is increased by 300 % (or) multiplied by the 4 times the original etc.
- 55) Rs. 40 $SP = CP + \left(SP \times \frac{20}{100} \right) \Rightarrow SP = 32 + \frac{SP}{5} \Rightarrow 5SP = 160 + SP \Rightarrow SP = 40$
- 56) 5^0
- 57) Monday
- 58) 8 ; $(5x + 6 + 12 + 18 + 24) = 100 \Rightarrow x = \frac{100 - 60}{5} = 8$
- 59) 37.5 % ; $1.6l \times xb = lb \Rightarrow x = \frac{1}{1.6} = 0.625 \Rightarrow 1 - 0.625 = 0.375 = 37.5 \%$
- 60) 613 ; $17^2 + 18^2$