KENDRIYA VIDYALAYA SANGATHAN (LUCKNOW REGION)
SESSION ENDING EXAMINATION: 2022-23
CLASS-IX Mathematics
MARKING SCHEME

Q. NO.	SOLUTION	MARKS
1	(a)Rational	1
2	(c) 1/5	1
3	(a) $x^2 + 2x - 15$	1
4	a) 4	1
5	d) 1	1
6	c) (4,0)	1
7	b) AC= ½ AB	1
8	c) 36°, 144°	1
9	c) AE	1
10	b) supplementary	1
11	a) Square	1
12	a) 4cm	1
13	c) 80°	1
14	c) $3\sqrt{3}\ cm^2$	1
15	b) $\pi r(l + r)$	1
16	d) $\frac{32}{3}\pi r^3$	1
17	a) 10 – 15	1
18	b) 25—35	1
19	(a)	1
20	(d)	1
21	$11^{\frac{1}{3}-\frac{1}{4}}$ $= 11^{\frac{1}{12}}$ **OR** $(\sqrt{3} + \sqrt{7})^2 = 3 + 7 + 2\sqrt{21}$ $= 10 + 2\sqrt{21}$	1 1 1 1
22	3y = ax + 7 For correct substitution x=3 ,y=4 For correct answer a= 5/3	 1 1
23	For correct formation of equation 8 +5(x-1)=y 5x-y +3 =0	1 1
24	For correct formula CSA of cone = πrl For correct answer =753.6 cm square	1 1
25	For correct calculation of x=130° For correct calculation of y=130° **OR** x:y = 2:1	1 1

	For correct formation of expression x=120° and y=60°	1 1
26	X= 0. $\overline{47}$ =0.4747…..(i) 100 x = 47.47..(ii) Subtracting (i) from (ii) 99x=47 X=47/99	 1 1 1
27	$x = 2 - \sqrt{3}$ 1/x = 1/($2 - \sqrt{3}$) (i) Rationalising (i) = $2 + \sqrt{3}$ So x + 1/x = $2 - \sqrt{3}$ +2 + $\sqrt{3}$ = 4	 2 1
28	Applying $(a + b + c)^2$ formula For correct substitution For correct answer = 1	1 1 1
29	$a)$ *For correct expansion of* $(2x - y + z)^2$ For correct expression $4x^2 + y^2 + z^2 - 4xy - 2yz + 4xz$ b) for correct use of identity $(100 - 2)^3$ and expansion =941192 **OR** a) For correct use of identity $(3y)^3 - (5z)^3$ and expanding it $(3y - 5z)(9y^2 + 15yz + 25z^2)$ b) Let a=-12 , b= 7 ,c=5. Then a+b+c=0 Using the correct identity $(-12)^3 + 7^3 + 5^3$= -1260	1 1 1 $1\frac{1}{2}$ $1\frac{1}{2}$
30	For correct use of parallel lines property For correct calculation of x = 125 , y = 125 , z =35 or for Correct proof stepwise $\angle ROS = \frac{1}{2}(\angle QOS - \angle POS)$	1 1 1 2 1
31	Finding semi perimeter= $\frac{(30+26+28)}{2}$ =42 Applying Heron'sformula Area =$\sqrt{s(s-a)(s-b)(s-c)}$ =$\sqrt{42(42-30)(42-26)(42-28)}$ = $\sqrt{(42}\times12\times16\times14)$ = $336m^2$ Total cost = 336 ×1. 50 = Rs 504	 2 1
32	a) Since (x-1) is factor , putting x=1 in p(x) And p(1) =0	1

	$2(1)^2 + k(1) + \sqrt{2} = 0$ $k = -(2 + \sqrt{2})$ b) $x^3 + 13x^2 + 32x + 20$ $= (x^2 + 12x + 20)(x + 1)$ $=(x-2)(x-10)(x+1)$	1 1
33	i) Using correct criteria SAS congruency $\Delta APD \cong \Delta CQB$ ii) By cpct AP = CQ iii) Using correct criteria SAS congruency $\Delta AQB \cong \Delta CPD$ iv) By cpct AQ = CP v)In APCQ since opposite sides are equal from ii) and (iv) so APCQ is a parallelogram	1 1 1 1 1
	OR For correct construction i) For correct proof $\angle A = \angle B$ ii) For correct proof $\angle C = \angle D$ iii) Using correct criteria SAS congruency $\Delta ABC \cong \Delta BAD$ iv) Since $\Delta ABC \cong \Delta BAD$ so by cpct diagonal AC = diagonal BD	 1 1 1 1 1
34	For correct proof of theorem with all the three cases and figure For correct application of theorem **OR** Writing correct given, to prove Writing correct proof	4 1 1 4
35	a) i) $SA = 4\pi r^2$ ii)CSA = $2\pi rh = 2\pi r \times 2r = 4\pi r^2$ iii) Ratio = 1: 1 b) D=0.21m R = 0.21/2 Volume of water displaced = $\frac{4}{3}\pi r^3 = \frac{4}{3}\pi(\frac{0.21}{2})^3$ $= 0.004851\ m^3$	 1 1 1 1 1
36	a) A(3,1) B(7,1) b) (2,11) is L and (7,4) is C c) Finding correct area of rectangle EFGL=8 x 3 = 24 unit square	1 1 2
37	a) AE b) Yes c) For correct proof	1 1 2
38	a) 14 b) 15 c) For finding class mark and correct frequency polygon	1 1 2