INDIAN SCHOOL MUSCAT

HALF YEARLY EXAMINATION

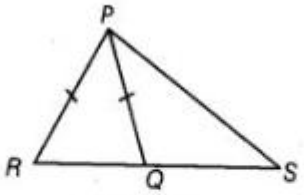
SET B

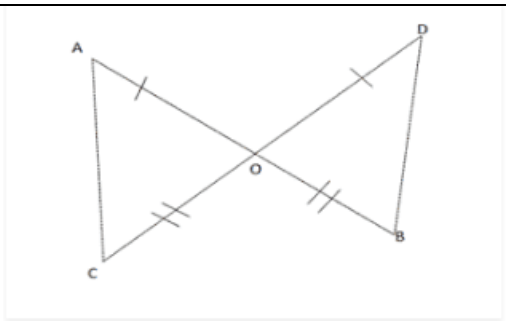
SEPTEMBER 2019

CLASS IX

Marking Scheme –MATHEMATICS

Q. NO	Answers **Set B**	Marks (with split up)
1	SECTION A (20 x 1= 20) . (c) 0. 3201	1 mark each for qns. 1-20
2	(a) A and C	
3	(c) quadrants I and II	
4	(d) -1	
5	(b) $\Delta CBA \cong \Delta PRQ$	
6	(b) y-axis	
7	(b) 1	
8	(c) 120°	
9	(c) $\sqrt{2}\,x^2 - 3x + 6$	
10	(c) 47°	
11	P= 14	
12	50°	
13	1/5	
14	PR	
15	(-4, 5)	
16	a= -5	
17	120°	
18	9996	
19	0.3162	
20	60°	
21	SECTION –B (6 x 2 = 12) (0, 0) (8, 0)	1m each
22	$4x^2 + 1/4\ y^2 + 9z^2 - 2xy + 3yz - 12zx$ (OR) $(x+y+z)^2 = x^2 + y^2 + z^2 + 2(xy + yz + zx)$ substituting the given values and we get $x^2 + y^2 + z^2 = 35$	
23	Let x= 1.4777… 10x=14.777… 100x=147.777… solving, we get x = 133/90	½ 1 ½
24	-2x +3y+4=0, 5x +7 =0	1 each
25	9x = 180° implies x= 20° smaller angle is 80° (OR)	1 each

	X+ 10 X+ 40+2X – 30° = 180° After solving we get, x = 40°. angles of a triangle are 50°, 80° and 50° this implies triangle is an isosceles.	step
26	**Given** In ΔPSR, Q is a point on the side SR such that $PQ = PR$. **To prove** $PS > PQ$  **Proof** In ΔPRQ, $PQ = PR$ [given $\Rightarrow$ $\angle R = \angle PQR$ ...(i) [angles opposite to equal sides are equa But $\angle PQR > \angle S$ ...(i [exterior angle of a triangle is greater than each of the opposite interior angle From Eqs. (i) and (ii), $\angle R > \angle S$ $\Rightarrow$ $PS > PR$ [side opposite to greater angle is longe $\Rightarrow$ $PS > PQ$ [$\because PQ = PR$	
33	<u>SECTION – C (8 x 3 = 24)</u> Construction – no. line	
28	a, c, e are irrationals, b, d, and f are rationals	
32	By remainder thm. f(3) = g(3) 27a +36 +9 -4 = 27 -12 +a By Solving, we get a = -1 (OR) $(a^3+b^3+c^3 - 3abc)= (a+b+c)[(a+b+c)^2- 3(ab + bc + ca)]$ $= 5 (5^2 – 3 \times 10)$ $= - 25$	

30	 Solution: Given: Line segments AB and CD intersect at O such that OA = OD and OB = OC. To prove: AC = BD Proof: In ΔAOC and ΔBOD, we have AO = OD [Given] $\angle$AOC = $\angle$BOD [Vertically opposite angles are equal] OC = OB [Given] So, by Side-Angle-Side criterion of congruence, we have, $\Rightarrow$ AOC $\cong$ ΔBOD $\Rightarrow$ AC = BD [Since the corresponding parts of the congruent parts of the congruent triangles are equal] y + 2y + 69 = 180° (linear pair) solving we get y = 37° 37° + x + x + 13° = 180° (angle sum property of a triangle) Implies x = 65° Therefore, the angles are 37°, 65° and 78°	
31	In ΔABC, AB = AC implies $\angle B = \angle C$ In ΔABE and ΔACD $AB = AC$ $\angle B = \angle C$ $BE = CD$ Therefore , $\Delta ABE \cong \Delta ACD$ (By SAS $\cong$ RULE) $AE = AD$ (CPCT)	
27	Given, to prove, construction and proof.	
29	Let the cost of a cake and a cookie be Rs. x and Rs. y 150 =4x + 3y (0, 50), (6, 42), (3, 46) or any other solutions….	
34	(i) $(4z/3 - 1)^3$ (ii) (2x + 5y) ($4x^2$ – 10xy + $25y^2$)	
39	<u>SECTION- D (6 X 4 = 24)</u> Rationalizing the denominator and on simplification we get a = 0 and b = -2	
36	x = -1 is a zero of the polynomial, quotient is $6x^2$ -13 x + 5 using splitting the middle term we get, (x+1) (3x +5) (2x -1)	
37	Any three solutions Pt.(3, 2) lies on the graph.	
38	Given, figure, to prove and proof. (OR)	

	$\angle QPS + x = \angle RPT$ $\angle QPS = 40°$ $\angle QPS + x + x + 30° = 90°$ On solving we get $x = 10°$	
35	Given, figure, to prove and proof.	
40	After plotting the points on the graph, we get trapezium and its area = 15 sq. units.	