

ANDHRA EDUCATION SOCIETY SCHOOLS
NEW DELHI
MID TERM EXAMINATION (2017-18)
CLASS - IX
SUBJECT - MATHEMATICS

Time : 3:00 Hrs.

Max Marks : 80

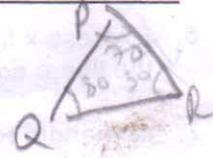
All questions are compulsory.

- 2) The question paper consists of 34 questions divided into 4 sections, A, B, C, D
 3) Sec A comprises of 1 mark each Sec B comprises of 2 marks each Sec C comprises 3 marks each and Sec D comprises 4 marks each .

SECTION A

- 1) The rationalising factor for the denominator of the expression

$$\frac{1}{3 + \sqrt{5}}$$



- 2) If $X = 2$ is a zero of the polynomial $2x^2 + 3x - p$, then the value of P is

- 3) If $a+b+c=0$ then $a^3 + b^3 + c^3$ is equal to.....



- 4) Boundaries of surfaces are.....

- 5) Write $4y = 1$ as an equation in two variables

- 6) Find the area of an equilateral triangle with side ~~4~~ cm.

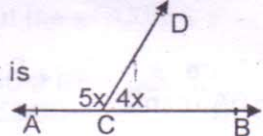
$$4\sqrt{3} = 3\sqrt{3} \text{ cm}^2$$

- 7) In triangle PQR $\angle P = 70^\circ$, $\angle R = 30^\circ$ which side of this triangle is the longest?

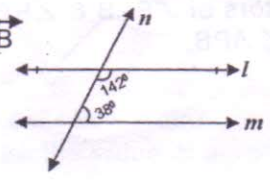
- 8) Abscissa of a point is positive in.....quadrant

I and IV

- 9) In fig the value of x is



- 10) In fig is $l \parallel m$ justify your answer



PTO

75
25

72
x-30

SECTION B

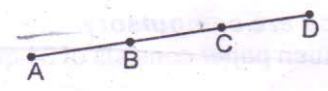
1. Write $\frac{3}{13}$ in decimal form and find what kind of decimal expansion it has.

2. Factorise $1 + 64x^3$

$1^3 + (4x)^3$

105
75
180

3. In fig. if $AC = BD$ then prove that $AB = CD$

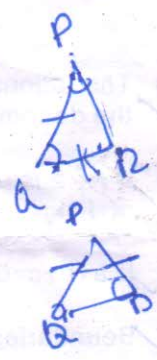


4. Two supplementary angles differ by 30° find the angles.

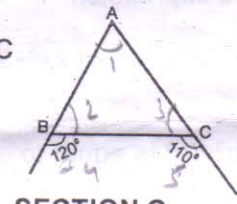
5. If the point (3,4) lies on the graph of $3x = ay + 7$. Find the value of 'a'.

6. Express x in terms of y for the linear equation $\frac{2x}{3} + 4y = -7$

7. In triangle PQR, $QR = PQ$ & $\angle Q = 40^\circ$ then find $\angle P$.



8. In fig, show that $AB > AC$



$\angle 4 > \angle 3$
 $\angle 1 + \angle 3$

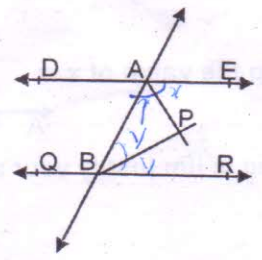
SECTION C

1. Locate $\sqrt{3}$ on the no. line

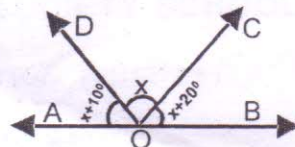
2. If $x = -\frac{1}{3}$ is a zero of the polynomial $P(x) = 27x^3 - ax^2 - x + 3$, then find the value of 'a'.

3. Prove that an equilateral triangle can be constructed on any given line segment.

4. In fig. DE||QR and AP & BP are bisectors of $\angle EAB$ & $\angle RBA$ resp. find $\angle APB$.



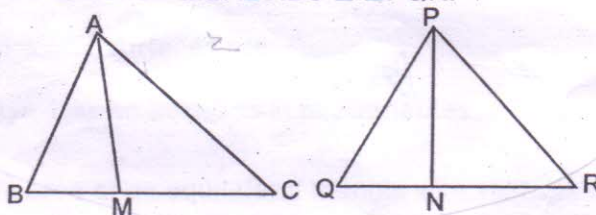
5. In the given fig. find x . Further find $\angle BOC$, $\angle COD$ & $\angle AOD$



6. Solve the equation $2x+1 = x-3$, & represent the solution on
1) the no. line 2) cartesian plane .
7. The sides of a triangle are in the ratio $25 : 17 : 12$ and its perimeter is 540 find the area of the triangle .
8. If the bisector of an angle of a triangle bisects the opposite side , prove that the triangle is isoscles
9. Plot the points $P(1,0)$, $Q(4,0)$, $S(1,3)$. Find the coordinates of the point R such that PQRS is a square.
10. Find the area of the triangle whose vertices are $(0, 4)$, $(0,0)$, $(2, 0)$ by plotting them on the graph.

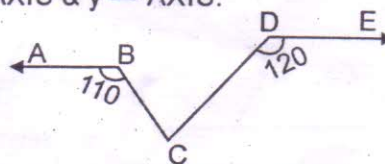
SECTION D

1. In figure two sides AB & BC and median AM of one triangle ABC are respectively equal to sides PQ. & QR and median PN of triangle PQR show that $\triangle ABC \cong \triangle PQR$.



2. A field is in the shape of a trapezium with parallel sides of length 25m & 10m and non parallel sides 14m and 13m long . Find the area of the field.
3. Draw the graph of the linear equation $3x + 4y = 6$ at what points does the graph cut the x- AXIS & y - AXIS.

- 4) In the given fig . $AB \parallel DE$, find the value of $\angle BCD$.



5. If both $(x-2)$ and $(x-\frac{1}{2})$ are factors of px^2+5x+r . Show that $p=r$
6. If $a = 8 + 3\sqrt{7}$ and $b = 1/a$ then what will be the value of a^2+b^2

$$a = 8 + 3\sqrt{7}$$