

SUMMATIVE ASSESSMENT - I, 2015-16
MATHEMATICS
Class - IX

Time Allowed: 3 hours

Maximum Marks: 90

General Instructions:

1. All questions are compulsory.
2. The question paper consists of 31 questions divided into four sections A, B, C and D. Section-A comprises of 4 questions of 1 mark each; Section-B comprises of 6 questions of 2 marks each; Section-C comprises of 10 questions of 3 marks each and Section-D comprises of 11 questions of 4 marks each.
3. There is no overall choice in this question paper.
4. Use of calculator is not permitted.

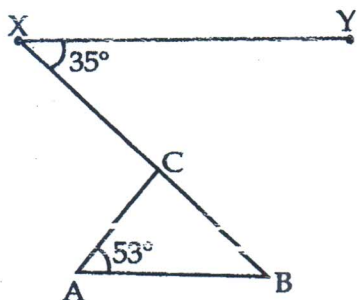
SECTION-A

Question numbers 1 to 4 carry one mark each.

1 Simplify : $(-3 + \sqrt{5})(-3 - \sqrt{5})$ 1

2 If $2x + 1$ is one factor of the polynomial $2x^2 - x - 1$, then find the other factor. 1

3 In the figure, $AB \parallel XY$, $\angle YXC = 35^\circ$ and $\angle BAC = 53^\circ$, then find $\angle ACB$. 1



4 In which quadrant/axis does the point (0,4) lies ? 1

SECTION-B

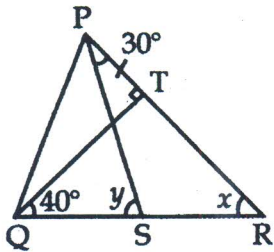
Question numbers 5 to 10 carry two marks each.

5 Find two rational numbers between 4 and 5. 2

6 Factorise : $3 - 12(a - b)^2$ 2

7 In the given figure, $QT \perp PR$, $\angle TQR = 40^\circ$ and $\angle SPR = 30^\circ$. Find x and y . 2

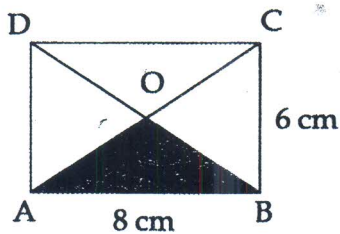
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- 8 In the given figure, if point C lies between A and B, then prove that $AB > AC$. Which Euclid's axiom is applied by you? 2



- 9 Write reflections of the point (1, 2) in x -axis and y -axis. 2
- 10 In the given figure, ABCD is rectangle in which $AB = 8$ cm, $BC = 6$ cm and the diagonals intersect each other at O. Find the area of the shaded region by using Heron's formula. 2



SECTION-C

Question numbers 11 to 20 carry three marks each.

- 11 Represent $\sqrt{9.3}$ on the number line. 3
- 12 Prove that $\frac{2^{30} + 2^{29} + 2^{28}}{2^{31} + 2^{30} - 2^{29}} = \frac{7}{10}$. 3
- 13 If x and y are two positive real numbers such that $x^2 + 4y^2 = 40$ and $xy = 6$, then find the value of $x + 2y$. 3
- 14 Find the value of $\frac{85^3 + 15^3}{85^2 + 15^2 - 85 \times 15}$, using a suitable identity. 3
- 15 In a triangle ABC, X and Y are the points on AB and BC respectively. If $BX = \frac{1}{2}AB$ and $BY = \frac{1}{2}BC$ and $AB = BC$. Show that $BX = BY$. 3
- 16 In the figure, the side QR of ΔPQR is produced to a point S. If the bisectors of $\angle PQR$ and $\angle PRS$ meet at a point T, then prove that $\angle QTR = \frac{1}{2} \angle QPR$. 3

