



Srinidhi A
ID: COMETFWCO53

10th CBSE MATHEMATICS 2018

SECTION A

- 1.1 Find the value of k for which the roots of the quadratic equation $(k-5)x^2+2(k-5)x+2 = 0$ are equal.
- 1.2 Find the value of y for which the distance between the points $(2, -3)$ and $(10, y)$ is 10 units.
- 1.3 Write whether the rational number $\frac{13}{3125}$ has a decimal expansion which is terminating or non-terminating repeating.
- 1.4 Write the n^{th} term of the A.P. $\frac{1}{k}, \frac{1+k}{k}, \frac{1+2k}{k}, \dots$
- 1.5 If $\sin \theta + \cos \theta = \sqrt{2} \cos(90^\circ - \theta)$, find the value of $\cot \theta$.
- 1.6 DE is drawn parallel to the base BC of $\triangle ABC$, meeting AB at D and AC at E. If $\frac{AB}{CD} = 4$ and $CE = 2$ cm, find AE.

SECTION B

- 2.1 A bag contains 5 red balls and some blue balls. If the probability of drawing a blue ball is three times that of drawing a red ball, find the number of blue balls.
- 2.2 The 5^{th} and 15^{th} terms of an A.P. are 13 and -17 respectively. Find the sum of the first 21 terms.
- 2.3 Using Euclid's Division Algorithm, find the HCF of 225 and 867.
- 2.4 If the point $(0, 2)$ is equidistant from $(3, k)$ and $(k, 5)$, find the value of k .
- 2.5 Find the value of a for which the pair of linear equations $2x+3y = 7$ and $4x+ay = 14$ has infinitely many solutions.

SECTION C

- 3.1 Show that any positive odd integer is of the form $4q + 1$ or $4q + 3$ for some integer q .
- 3.2 The ten's digit of a number is twice its unit's digit. The number obtained by interchanging the digits is 36 less than the original number. Find the original number.
- 3.3 The line segment joining $A(2, 1)$ and $B(5, -8)$ is trisected at points P and Q . If P lies on the line $2x - y + k = 0$, find the value of k .
- 3.4 Show that $1, \frac{1}{2}$ and -2 are the zeroes of the polynomial $2x^3 + x^2 - 5x + 2$.
- 3.5 Prove that the angle between the two tangents drawn from an external point to a circle is supplementary to the angle subtended by the line segment joining the points of contact at the centre.