

Mathematics

Note: Question 1 to 10 carry 3 marks each.

MM:30

1. Solve (By cross multiplication method): $2x - y = 11$, $5x + 4y = 1$.
2. In a triangle ABC, $\angle C = 3 \angle B = 2 (\angle A + \angle B)$. Find the three angles.
3. Solve for u and v: $15/u + 2/v = 17$, $1/u + 1/v = 36/5$.
4. Seven times a two digits number is the same as four times the number obtained on interchanging the digits of the given number. If one digit of the given number exceeds the other by 3, find the number.
5. Solve graphically: $x + y = 3$, $2x + 5y = 12$. Also find the points where the lines meet the x – axis.
6. If we add 5 to the denominator and subtract 5 from the numerator of a fraction, it reduces to $1/7$. If we subtract 3 from the numerator and add 3 to its denominator, it reduces to $1/3$. Find the fraction.
7. Find the value of k for which the following equations have unique solution.
 $7x - 5y - 4 = 0$, $14x + py + 4 = 0$.
8. Solve for x and y: $x/a + y/b = 2$, $ax - by + b^2 - a^2 = 0$.
9. Solve for x and y: $ax + by = c$, $bx + ay = 1 + c$.
10. Points A and B are 100 km apart on a highway. One car starts from A and another from B at the same time. If the cars travel in the same direction at a constant speed, they meet in 5 hours. If the cars travel towards each other, they meet in 1 hour. What are the speeds of the two cars?