1. Find the possible number of equations of second degree in one variable such that the product roots and their sum of roots are equal.

2. Represent \( \sqrt{3} \) in the form of \( \frac{P}{q} \)

3. Which is greater \( \sqrt{3} \) or \( \sqrt{5} \)?

4. Find the last digit of the sum \( 1! + 2! + \cdots + 10! \).

5. If both the zeros of the quadratic polynomial \( ax^2 + bx + c \) are equal and opposite in sign then the value of \( b \) is.

6. Find the number of solutions of the linear equation \( 2x + 3y = 4 \) and write their all solutions.

7. Solve \( \frac{18 - 2m}{5} + \frac{4m + 3}{7} \geq \frac{m}{5} + \frac{9}{7} \)

8. If \( \frac{x}{a} = \frac{y}{b} = \frac{z}{c} \), then prove that each ratio is equal to \( \frac{3x^2 - 11y^2 + 13z^2}{3a^2 - 11b^2 + 13c^2} \)

9. The angry Arjun carried some arrows for fighting with Bheeshm. With half the arrows, he cut down the arrows thrown by Bheeshm on him and with six other arrows he killed the rath driver of Bheeshm. With one arrow each he knocked down respectively the rath, flag and the bow of Bheeshm. Finally, with one more than four times the square root of arrows he laid Bheeshm unconscious on an arrow bed. Find the total number of arrows Arjun had.

10. Two pipes A and B can fill a cistern in 12 min and 16 min respectively. Both the pipes are opened together for a certain time but due to some obstruction, the flow of water was restricted to \( \frac{7}{8} \) of the full flow in pipe A and \( \frac{5}{6} \) of the full in pipe B. The obstruction, is removed after some time and the tank is now filled in 3 min from that moment. For how many minutes was the obstruction there?

   दो पाप में दो टंकी को भरने का क्रम: 12 मिनट और 16 मिनट में पानी का प्रवाह होता है। दोनों पापों को एक समय के लिए एक साथ खोला जाता है, लेकिन किसी स्क्वायर से देर देर यह घटता है कि पाप A में पूर्ण प्रवाह के 7/8 और पाप B में पूर्ण प्रवाह के 5/6 तक सीमित हो जाता है। स्क्वायर को बाद में हटा दिया जाता है। कुछ समय और टंकी अब वहाँ क्षण से 3 मिनट में पूर्ण हो जाती है। कितने मिनट तक यहाँ लगा रहा?