1. If a, b, c are all non-zero and a + b + c = 0, prove that
$$\frac{a^2}{bc} + \frac{b^2}{ca} + \frac{c^2}{ab} = 3$$

2. Factorise : $8p^3 + \frac{12}{5}p^2 + \frac{6}{25}p + \frac{1}{125}$

3. If $a + b + c = 9$ and $ab + bc + ca = 26$, find $a^2 + b^2 + c^2$

4. If $p(x) = x^2 - 2\sqrt{2x+1}$, then find $p\left(2\sqrt{2}\right)$

5. Factorise: $(a - b)^3 + (b - c)^3 + (c - a)^3$

6. In a school function. students having 100% attendance are to be honoured. Class teacher of IX A gives the number of eligible students as $\left[\sqrt{9+2x}\right] - \sqrt{2x}$ where as the class teacher of IX B gives the number of such students as $\left[\frac{5}{\sqrt{9+2x}}\right]$.
If both the above numbers are equal then, find the number of prize-winners of 100% attendance in each section of class IX.

7. Ravita donated ₹ $\left[x^3 + \frac{i}{x^3}\right]$ to a blind school. Her friends wanted to know the amount donated by her. She did not disclose the amount but gave a hint that $x + \frac{1}{x} = $ ₹ 7.
Find the amount donated by Ravita to the blind school.

8. A group (a+b) teachers, $(a^2 + b^2)$ girls $(a^3 + b^3)$ boys set out for an 'Adult Education Mission'. If In the group, there are 10 teachers and 58 girls then, Find the number of boys.

9. Is $x^2 - 3x + 2$ divides $x^3 - 6x^2 + ax + b$ exactly, the find the value of 'a' and 'b'

10. If $3 + 5 - 8 = 0$,then the value of $(3)^3 + (5)^3 - (8)^3$ is?

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