

Question#9388

Sub 26

Ques. 25

Solve the equation:

$$\log_b(x^2 + 7) = \frac{2}{3}\log_b 64$$

Solution:

$$\log_b(x^2 + 7) = \frac{2}{3}\log_b 64,$$

$$\log_b(x^2 + 7) = \log_b(64^{\frac{2}{3}}),$$

$$x^2 + 7 = 16$$

$$x^2 = 9$$

$$x = \pm 3$$

Answer:

There are two decisions: $x_1 = 3, x_2 = -3$.