

For $ax^2 + bx + c = 0$, the value of x is given by

$$D = b^2 - 4ac$$

$$x = \frac{-b \pm \sqrt{D}}{2a}$$

or

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

If $D > 0$, there are two solutions.

If $D = 0$, there is only one solution.

If $D < 0$, there are no real solutions.

7. $x^2 + 10x + 25 = 0$

$$D = 10^2 - 4 \cdot 1 \cdot 25 = 100 - 100 = 0$$

$$x = \frac{-10}{2} = -5$$

8. $5x^2 + 2x + 10 = 0$

$$D = 2^2 - 4 \cdot 5 \cdot 10 = 4 - 200 = -196$$

There are no real solutions

9. $3x^2 = 7x + 20$

$$3x^2 - 7x - 20 = 0$$

$$D = 7^2 + 4 \cdot 3 \cdot 20 = 49 + 240 = 289$$

$$x_1 = \frac{7+17}{6} = 4$$

$$x_2 = \frac{7-17}{6} = -\frac{5}{3}$$