

Topic 10: Solve quadratic equations and applications
--

Solve.

1. $x^2 + 8x + 6 = 0$

2. $24x^2 - 7x - 6 = 0$

3. $(x+3)^2 - 4(x+3) - 12 = 0$

4. $2x^2 - 4x + 1 = 0$

5. The daily manufacturing cost (in dollars) for a company producing bird houses is given by the equation $C(x) = x^2 - 10x + 1000$, where x is the number of birdhouses produced per day.

(a) How many birdhouses should be produced to minimize the daily manufacturing cost?

(b) What is the minimum daily manufacturing cost?

Answers

1. $x = -4 \pm \sqrt{10}$

2. $x = -\frac{3}{8}, x = \frac{2}{3}$

3. $x = 3, x = -5$

4. $x = \frac{2 \pm \sqrt{2}}{2} = 1 \pm \frac{\sqrt{2}}{2}$

5. (a) 5 (b) \$975