

1. Solve each equation by factoring:

a) $x^2 + 15x + 56 = 0$

b) $x^2 - 3x + 7 = x + 52$

c) $2x^2 - 5x = x^2 + 3x$

d) $2x^2 + 3x = 5$

2. Solve each equation by graphing:

a) $x^2 + 2x - 24 = 0$

b) $x^2 - 6x = x$

c) $x^2 + 12x = 2x - 7$

d) $2x^2 + 6x = x - 1$

3. Solve each equation by taking a square root:

a) $x^2 - 4 = 60$

b) $(x - 3)^2 = 81$

c) $2(x + 4)^2 = 98$

d) $(x - 2)^2 + 2 = 18$

e) $3(x + 2)^2 - 4 = 71$

f) $4(x + 3)^2 - 2 = 398$

4. Solve each equation using the quadratic formula:

a) $x^2 - 10x + 5 = 0$

b) $x^2 + 2x - 4 = 3x - 8$

c) $2x^2 = 3x - 10$

5. Find each vertex and axis of symmetry:

a) $x^2 + 8x + 12 = 0$

b) $y = -x^2 + 12x - 36$

c) $5x^2 + 8x - 4 = 0$

d) $y = x^2 - 8x - 20$

e) $2x^2 - x = x^2 + 2x + 40$

f) $2(x + 4)^2 + 5 = 0$

g) $(x - 3)^2 - 2 = 0$