Solve Quadratic Equations by Factoring

Solve the following by factoring:

1.
$$x^2 + 3 = 4x$$

$$2.2x^2 + x = 6$$

3.
$$x^2 - x = 0$$

$$4.6x^2 = 1 - x$$

5.
$$x^2 - 12 = 4x$$

6.
$$x^2 + 6x + 9 = 0$$

7.
$$x^2 - 25 = 0$$

8.
$$6 - 7x = 3x^2$$

9.
$$2x^2 - 20x + 42 = 0$$

10.
$$4x^2 - 1 = 0$$

11.
$$12 + 24x^2 - 34x = 0$$

12.
$$x^2 - 9 = 8x$$

13. The area of a rectangular floor is described by the equation

$$w(w - 9) = 252$$

Where w is the width of the floor in meters. What is the width of the floor?