Problem 1. Solve the following linear equations. Correctly write the solution set.

(a) $x = 8 + 5$

(b) $2x = 10$

(c) $3x - 7 = x - 5$

(d) $8x - 7 = 5x + 8$

(e) $x - \dfrac{1}{2} = 3x - \dfrac{5}{2}$

(f) $\dfrac{x}{5} + \dfrac{1}{3} = 2$

Problem 2. For each quadratic equation, put it in "standard form" $(ax^2 + bx + c = 0)$. Then identify the a, b, and c.

(a) $3x^2 + 8x - 10 = 0$

(b) $8 + 2x + 7x^2 = 0$

(c) $2x^2 = 9x - 3$

(d) $8x - 7 + x^2 = 5x + 8$

(e) $x^2 = 9$

(f) $\dfrac{x^2}{5} + \dfrac{x}{3} = 2$

Problem 3. Solve these quadratic equations by extraction of roots. Correctly write the solution set.

(a) $x^2 = 9$

(b) $x^2 = 5$

(c) $2x^2 + x = 20 + x$

(d) $3x^2 - 21 = 0$

(e) $5x^2 - 2 = 2x^2 - 5$

(f) $x^4 = 16$

Problem 4. Solve these quadratic equations by factoring. Correctly write the solution set.

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

(b) $x^2 - 10x + 25 = 0$

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

(d) $x^2 - x - 6 = 0$

(e) $x^2 - 5x - 36 = 0$

(f) $x^2 + 3x = 40$