1) $-6x^2 + x = 0$

$x(-6x + 1) = 0$

$x = 0$ ou $-6x + 1 = 0$

$-6x = -1$

$x = \frac{-1}{-6}$

$x = \frac{1}{6}$

$S = \{0 ; \frac{1}{6}\}$

2) $\frac{5x}{3} + x^2 = 0$

$x(\frac{5}{3} + x) = 0$

$x = 0$ ou $\frac{5}{3} + x = 0$

$x = -\frac{5}{3}$

$S = \{0 ; -\frac{5}{3}\}$

3) $(x^2 - 1)(2x - 3) = 0$

$x^2 - 1 = 0$ ou $2x - 3 = 0$

$x^2 = 1$ $\quad 2x = 3$

$x = 1$ $\quad x = \frac{3}{2}$

ou $x = -1$

$S = \{1 ; -1 ; \frac{3}{2}\}$

4) $\frac{x}{3} - 6 = 4 + \frac{3x}{2}$

$\frac{x}{3} - \frac{3x}{2} = 4 + 6$

$\frac{2x}{6} - \frac{9x}{6} = 10$

$-\frac{7x}{6} = 10$

$-7x = 60$

$x = -\frac{60}{7}$

5) $\frac{3x - 4}{2} = 5$

$3x - 4 = 10$

$3x = 14$

$x = \frac{14}{3}$

6) $\frac{5 - x}{4} = \frac{3 - 2x}{3}$

$3(5 - x) = 4(3 - 2x)$

$15 - 3x = 12 - 8x$

$-3x + 8x = 12 - 15$

$5x = -3$

$x = -\frac{3}{5}$

7) $4x^2 = 9$

$x^2 = \frac{9}{4}$

$x = \sqrt{\frac{9}{4}}$ ou $x = -\sqrt{\frac{9}{4}}$

$x = \frac{3}{2}$ ou $x = -\frac{3}{2}$

8) $2x^2 - 6 = 0$

$2x^2 = 6$

$x^2 = 3$

$x = \sqrt{3}$ ou $x = -\sqrt{3}$

$S = \{-\sqrt{3} ; \sqrt{3}\}$