Inequalities

1. Reshape each of the following inequalities so that the two sides have the given form.

   a) $10x + 14 \leq -10(x - 1) - 4$, on the left only x (without prefactor), on the right a constant

   b) $2x^2 + 5 \geq 5x^2 + 9x - 1$, left only x^2 (without prefactor), right no multiples of x^2

   c) $2x^2 + 5x + 5 < 2x + 2\left|7 + x^2\right| + 10$, left only $\left|7 + x^2\right|$, right no absolute value

   d) $4x(x - 2) - 10x > 9(1 - 2x)$, left only $|x|$, right no absolut value

2. Give the solution sets of the following inequalities.

   a) $7x - 5 \geq 5x + 4$

   b) $\frac{14x}{5} - 3 < 4\left(x - \frac{1}{2}\right)$

   c) $x^2 - 4x + 5 \geq 2(1 - x)$

   d) $-4x^2 - 16 < 16x$

   e) $3x^2 + 24x + 6 \leq 6(-x^2 - 2)$

   f) $2x^2 + 4x + 14 \geq 10(x^2 + 2x + 2)$

   g) $|x + 2| \leq 5$

   h) $|-5x + 7| \geq 4$

   i) $\frac{10}{|6x-2|} \leq 2$

   j) $\frac{9}{\sqrt{5x-10}} \geq 2$