Math 5a, homework 15.

1. Solve the equations:

   $a.\ \ 2 \cdot (x - 9.5) - 3 \cdot (x + 1.8) = -4.4;$ $\quad b.\ \ 5.7 - (x - 11.3) = 2 \cdot (x + 3.7);$

   $c.\ \ -4 \cdot (x - 7.6) = 8 \cdot (x - 1.8) - 3.2;$ $\quad d.\ \ 15.3 - 2 \cdot (x - 0.9) = -0.7 + 3 \cdot (x - 2.4);$

2. Simplify:

   $a.\ \ \frac{3ab}{7xy} : \frac{2ab}{7by};$ $\quad b.\ \ 4am : \frac{8mx}{2x^2};$ $\quad c.\ \ \left(\frac{3a}{5b} : \frac{4a}{7b}\right) \cdot \frac{20}{21}$

   $d.\ \ \frac{2x}{3y} : \frac{7bx}{9ay};$ $\quad e.\ \ 15n : \frac{5nx}{3y};$ $\quad f.\ \ \left(\frac{25xy}{3ab} \cdot \frac{24b^2}{35x^2y}\right) : \frac{1}{x}$

3. Parallelogram is a quadrilateral made by two pairs of parallel sides. Can you prove that
   a. Opposite angles are equal.
   b. Opposite sides are equal.
   c. C. Diagonals of a parallelogram divide themselves into half.
   (hint: two parallel lines crossed by the third line, congruency of two triangles).