Name _____

Homework 6
Sections 2.3 & 2.4

1. (1ea) Determine the *slope* of the following lines:

   (a) L_1, which passes through $(-7, 10)$ and $(11, -4)$.

   (b) L_2, which is perpendicular to the line $8x - 5 = 0$.

   (c) L_3, which is perpendicular to the line given by $3x + 5y - 6 = 0$.

Give your answer to each of the following in slope-intercept form.

2. (2) Determine the equation of the line which passes through $(-8, 7)$ and has slope $m = -\frac{3}{4}$.

3. (3) Determine the equation of the line which passes through the points $(-5, -1)$ and $(7, 5)$.

4. (3) Determine the equation of the line which is parallel to $2x + 3y = 7$ and passes through the point $(8, 5)$

5. (4) Consider the line L which is given by $3y - 2x = 18$. Determine the equation of the line which is perpendicular to L and has the same x-intercept as L.

6. (5) Consider the following lines:

$$L_1 : Cx + 2y = 8$$
$$L_2 : 3x + (C+1)y + 11 = 0$$
$$L_3 : (C-1)x = 6y + 5$$

Determine the value(s) of C so that L_1 is parallel to L_2 **and** L_1 is perpendicular to L_3.