THEORETICAL PART:

Theorem (Slopes of Parallel Lines):

Two nonvertical lines with slopes m_1 and m_2 are parallel if and only if $m_1 = m_2$. Also, two vertical lines are always parallel to each other.

Theorem (Slopes of Perpendicular Lines):

Suppose m_1 and m_2 represent the slopes of two lines, neither of which is vertical. The two lines are perpendicular if and only if

$$m_1 = -\frac{1}{m_2} \quad \text{or} \quad m_2 = -\frac{1}{m_1} \quad \text{or} \quad m_1 m_2 = -1.$$

If one of two perpendicular lines is vertical, the other is horizontal, and their slopes are, respectively, undefined and zero.

PRACTICAL PART:

1. Find equations for two lines parallel to each of the given lines:

   (a) $y = -\frac{2}{3}x + 4$

   (b) $10x - 2y = 14$

2. Find the equation, in slope-intercept form, for the line that is parallel to the line $3x + 5y = 23$ and passes through the point $(-2, 1)$.

3. For each line given, find the equation of a perpendicular line:
   - $y = -\frac{4}{9}x + 2$.
   - The line passing through the points $(-1, 3)$ and $(4, 1)$.

4. Find the equation, in standard form, of the line that passes through the point $(-3, 13)$ and is perpendicular to the line $y = -7$.

5. For each pair of lines, determine if the lines are parallel, perpendicular, or neither:
   - $3x - 7y = 12$ and $14x + 6y = -5$
   - $y = \frac{3}{4}x + 1$ and $y = \frac{4}{3}x - 5$