Parallel Lines

Parallel Lines have the same slope.
    Find the equations of the lines passing through the given points parallel to the given line. Write answers in slope-intercept form when possible.

Ex #1: Through $(2,5)$; parallel to $3x + 7y = 14$

1. Find the slope of the given line by solving for y.

2. Use the slope and the given point to write equation of line.

3. Write answers in slope-intercept form when possible.

Ex #2: Through $(-4,-9)$;
        parallel to $y = 2$

Ex #3: Through $(7,-2)$;
        parallel to $x = 8$

Perpendicular Lines

Perpendicular Lines slopes are opposite reciprocals.
(flip and change the sign)
Find the equations of the lines passing through the given points perpendicular to the given line. Write answers in slope-intercept form when possible.

Ex #1: Through $(2,5)$; perpendicular to $y = 4x - 5$

1. Find the slope of the given line by solving for y.
2. Find the opposite reciprocal of the slope. We label this $m_\perp$
3. Use $m_\perp$ and the given point to write equation of line.
4. Write answers in slope-intercept form when possible.

Ex #2: Through $(-7,2)$; perpendicular to $3x - 5y = 15$

Ex #3: Through $(-4,-9)$;
    perpendicular to $y = 8$
	Ex #4: Through $(7,-2)$;
	    perpendicular to $x = -3$