

1. Find an equation for the line that passes through the point $(2, -5)$ and
 - (a) has slope -3
 - (b) is parallel to the x -axis
 - (c) is parallel to the y -axis
 - (d) is parallel to the line $2x - 4y = 3$
2. Find an equation for the circle that has center $(-1, 4)$ and passes through the point $(3, -2)$.
3. Find the center and radius of the circle with equation $x^2 + y^2 - 6x + 10y + 9 = 0$.
4. Let $A(-7, 4)$ and $B(5, -12)$ be points in the plane.
 - (a) Find the slope of the line that contains A and B .
 - (b) Find an equation of the line that passes through A and B . What are the intercepts?
 - (c) Find the midpoint of the segment AB .
 - (d) Find the length of the segment AB .
 - (e) Find an equation of the perpendicular bisector of AB .
 - (f) Find an equation of the circle for which AB is a diameter.
5. Sketch the region in the xy -plane defined by the equation or inequalities.

(a) $-1 \leq y \leq 3$	(b) $ x < 4$ and $ y < 2$
(c) $y < 1 - \frac{1}{2}x$	(d) $y \geq x^2 - 1$
(e) $x^2 + y^2 < 4$	(f) $9x^2 + 16y^2 = 144$