

1. Find an equation for the line l passing through $(-4, 9)$ that is perpendicular to the line l' with equation $x - 2y = 4$;
2. Consider the equation $f(x) = -x^2 + 6x + 7$;
 - (a) Find the vertex of the corresponding parabola;
 - (b) Indicate the opening direction (with justification);
 - (c) Find the y -intercept and the x -intercept(s);
 - (d) Sketch the graph of the parabola, making sure to **label all important points**.