1. Given
   \[ f(x) = x^3 - 9x^2 - 48x + 52, \]
   and a partial graph.

   Figure 1: Partial graph of \( f(x) = x^3 - 9x^2 - 48x + 52 \), labeled with key points.

   Answer each of the following questions.
   (a) 1 point Find \( f'(x) \) and factor it completely.
(b) 1 point Find $f''(x)$ and factor it completely.

(c) 1 point Find where $f(x)$ is increasing.

(d) 1 point Find where $f(x)$ is decreasing.

(e) 2 points Find the local maximum point.

(f) 2 points Find the local minimum point.

(g) 2 points Find the inflection point.\(^1\)

\(^1\)The point on $f$ where the second derivative changes sign.