<p style="text-align: center;">**The Shape of a Graph - Handout/Worksheet**</p>

1. **The Second Derivative Test** Let c be a critical point of $f(x)$. If $f''(x)$ exists, then

   - $f''(c) > 0 \rightarrow f$ has a local minimum at c.
   - $f''(c) < 0 \rightarrow f$ has a local maximum at c.
   - $f''(c) = 0 \rightarrow$ inconclusive: $f(c)$ may be a local max, local min, or neither.

2. **Definition**: A point P on a curve $y = f(x)$ is called an *inflection point* if f is continuous there and the curve changes from concave up to concave down or vice versa.

3. Find the points of inflection and intervals of concavity of $f(x) = 3x^5 - 5x^4 + 1$.