1. **A.** The points of inflection are at $x = 2, x = 4, x = 6$ because the tangent slope of the tangent lines at these points are $0 \rightarrow f''(x) = 0$. That means that the graph of f changes its concavity at these points.

   B. The function f has has relative maximum at $x = 7$ because there is a critical point $f'(7) = 0$ and $f''(7) < 0$.

   C. The graph is concave up on $0 < x < 2$ and $4 < x < 6$ because $f''(x) > 0$ for those intervals.

2. **A.** To identify the relative extrema of g we need to find the critical points. We know that $f'(x) = 0 or DNE$ at those points.

$$f'(x) = 3x^2 - 12$$
$$\text{Now we need to set it equal to zero}$$
$$x = \pm 2$$

   We know that the critical point of g is at $x = \pm 2$. Now we need to look at the function g'' to determine wether it is maximum, minimum or neither of those.

$$g''(x) = 6x$$

   If we plug the x-coordinates of the critical points into the second derivative we'll know that $g''(-2) < 0$ and $g''(2) > 0$. We now know that there's maximum at $x = -2$ where $g(-2) = 16$ and there's a minimum at $x = 2$ where $g(2) = -16$.

   B. To determine the concavity of the function we need to find the inflection points ($g''(x) = 0$) which will split the function into concave up and concave down areas.

$$0 = 6x$$
$$x = 0$$

   The point of inflection of g is at $x = 0$. From the previous part we know that for $x < 0$ $g''(x) < 0$ and for $x > 0$ $g''(x) > 0$. The function is concave down for $x < 0$ and concave up for $x > 0$.