Use the following parametric curves to answer each question

$$x = t^2 + 2t, \quad y = t^2 - 2t + 3$$

1.   Find $\dfrac{d^2 y}{dx^2}$

2.   Find the highest point on the parametric curve from $0 \le t \le 2$

3.   Find the points on the curve where the tangent is horizontal or vertical.

4.   Find the length of the arc on the following interval $0 \le t \le 2$