

1. (a) $\frac{1}{2}(x^2 - 2x)^{-\frac{1}{2}}(2x - 2)$

(b) $-\frac{10x - 6}{(5x^2 - 6x + 2)^2}$

(c) $\frac{1}{2}\left(1 + \frac{1}{t}\right)^{-\frac{1}{2}}\left(-\frac{1}{t^2}\right)$

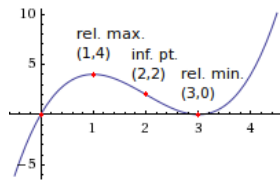
2. $\frac{-2x + 2xy}{-x^2 + 3y^2}$

3. critical numbers: -2, 2, 3; critical points: (-2,-6), (2,3), (3,4)

4. increasing on the interval $x < -2$, decreasing on the interval $x > -2$

5. on $x < 0$ concave down, on $0 < x < 3$ concave down, on $x > 3$ concave up
inflection point: (3, -162)

6. vertical: $x = 2$, $x = -2$; horizontal: $y = 1$



7.

8. minimum 4, maximum 5

9. $E(p) = -2$, elastic