

$$\boxed{324} \quad y = \frac{x^2(x-5)^2}{27}, \quad \frac{dy}{dx} = \frac{5x(x-2)(x-5)^2}{27}$$

find critical values, critical points, increasing, decreasing, relative max., relative minima, and horizontal points of inflection.

$$\rightarrow y' = 0$$

$$\frac{5x(x-2)(x-5)^2}{27} = 0 \rightarrow 5x(x-2)(x-5)^2 = 0$$

$$\text{either } 5x = 0 \rightarrow \boxed{x = 0}$$

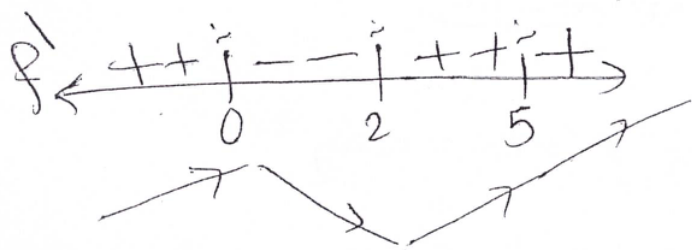
$$\text{or } x - 2 = 0 \rightarrow \boxed{x = 2}$$

$$\text{or } (x-5)^2 = 0 \rightarrow x - 5 = 0 \rightarrow \boxed{x = 5}$$

$\rightarrow y'$ is undefined! No values.

so the critical values $x = 0, 2, 5$.

the critical points $(0, f(0)) = (0, 0)$
 $(2, f(2)) = (2, \frac{4}{3})$
 $(5, f(5)) = (5, 0)$



relative max. $(0, f(0)) = (0, 0)$

relative min. $(2, f(2)) = (2, \frac{4}{3})$

horizontal point of inflection = $(5, f(5)) = (5, 0)$.