

$$\textcircled{4)} \int \frac{dx}{|x| \sqrt{25x^2 - 1}}$$

$$u = 5x$$

$$du = 5 \cdot dx$$

$$\frac{1}{5} du = dx$$

$$\frac{1}{5} \int \frac{du}{\left(\frac{u}{5}\right) \sqrt{u^2 - 1}}$$

$$\int \frac{du}{|u| \sqrt{u^2 - 1}} = \sec^{-1} u$$

$$\int \frac{du}{|u| \sqrt{u^2 - 1}} = \sec^{-1} u$$

$$\sec^{-1} 5x + C$$

$$y^3 - xy = 2$$

If can
be shown

that $\frac{dy}{dx} = \frac{y}{3y^2 - x}$

- (a) Find tangent line at $(-1, 1)$
- (b) Find (x, y) where tangent line is vertical
- (c) Find $\frac{d^2y}{dx^2}$ at $(-1, 1)$