

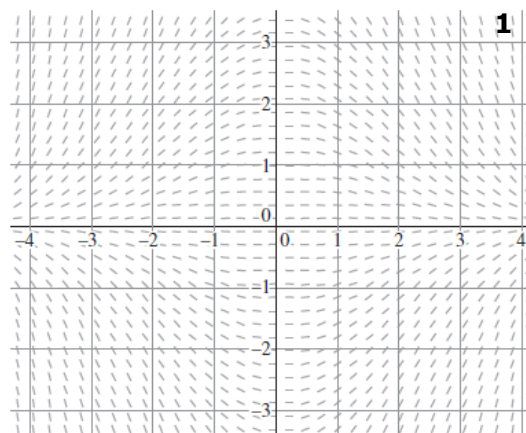


**MX** **5** The slope field for a first order differential equation is shown.

**SQ**

Which of the following could be the differential equation represented?

- A.  $\frac{dy}{dx} = \frac{x}{3y}$   
 B.  $\frac{dy}{dx} = -\frac{x}{3y}$   
 C.  $\frac{dy}{dx} = \frac{xy}{3}$   
 D.  $\frac{dy}{dx} = -\frac{xy}{3}$



**D**

When  $y = 0$ ,  $\frac{dy}{dx} = 0$  and so options A and B are eliminated.

At  $x = 2$  and  $y = 2$ ,  $\frac{dy}{dx} < 0$ , so option C is eliminated.

$$\therefore \frac{dy}{dx} = -\frac{xy}{3}$$

\* These solutions have been provided by [projectmaths](http://projectmaths.com.au) and are not supplied or endorsed by NESA.

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