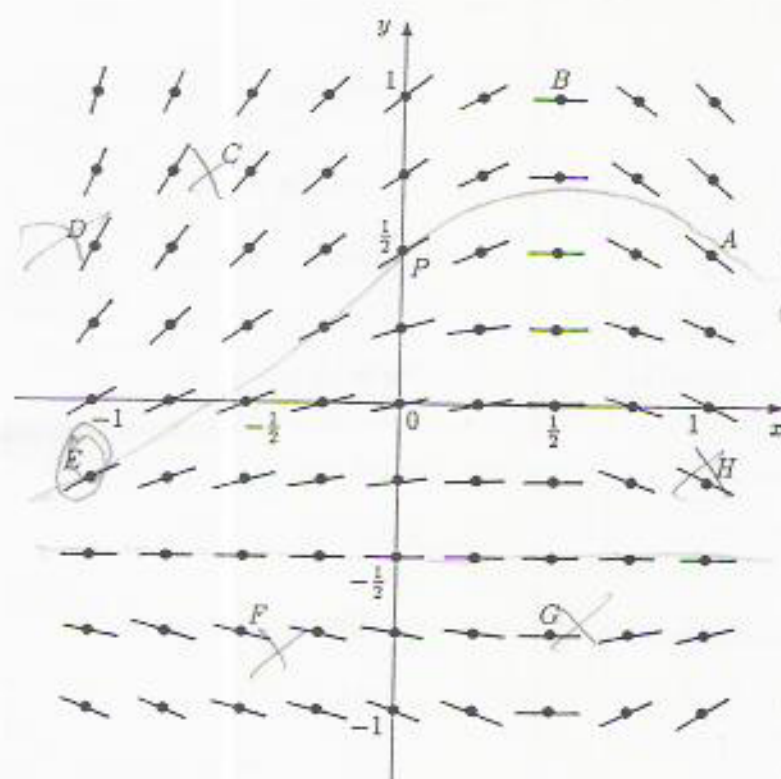


Questions 7 and 8



$$\frac{dy}{dx}(1, \frac{1}{2}) = \frac{1}{2}$$

- 7 For the direction field shown above, sketch the trajectory which passes through the point P. Select which TWO of the points marked A, B, C, ..., H are closest to this trajectory.

Options

- A Point A B Point B C Point C D Point D
E Point E F Point F G Point G H Point H

[There are TWO correct options.]

- 8 Select the differential equation which is the one most likely to be satisfied by the trajectories of the direction field shown above.

Options

- A $\frac{dy}{dx} = (x + \frac{1}{2})(y + \frac{1}{2})$ B $\frac{dy}{dx} = (x + \frac{1}{2})(y - \frac{1}{2})$
C $\frac{dy}{dx} = (x - \frac{1}{2})(y + \frac{1}{2})$ D $\frac{dy}{dx} = (x - \frac{1}{2})(y - \frac{1}{2})$
E $\frac{dy}{dx} = -(x + \frac{1}{2})(y + \frac{1}{2})$ F $\frac{dy}{dx} = -(x + \frac{1}{2})(y - \frac{1}{2})$
G $\frac{dy}{dx} = -(x - \frac{1}{2})(y + \frac{1}{2})$ H $\frac{dy}{dx} = -(x - \frac{1}{2})(y - \frac{1}{2})$

$$P(-(-\frac{1}{2})(1)) = \frac{1}{2}$$

$$E(-(-1-\frac{1}{2})(-\frac{1}{4}+\frac{1}{2})) = +\frac{3}{2} \times \frac{1}{4} = +\frac{3}{8}$$

$$A(-(-1-\frac{1}{2})(\frac{1}{2}+\frac{1}{2})) = -\frac{1}{2} \times 1 = -\frac{1}{2}$$

$$A(1, \frac{1}{2})$$

$$B(\frac{1}{2}, 1)$$

$$C(-\frac{1}{2}, \frac{3}{4})$$

$$D(-1, \frac{1}{2})$$