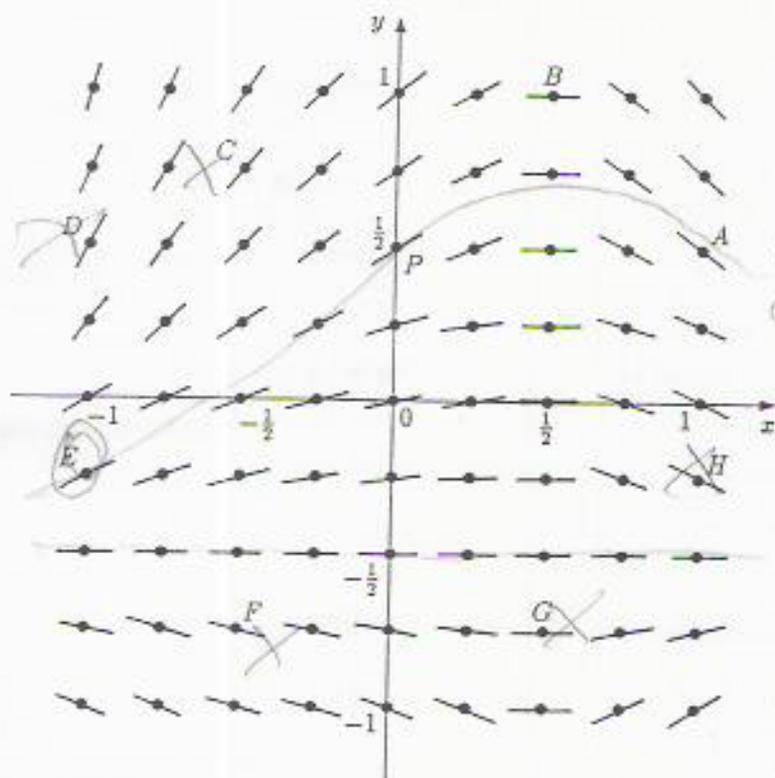


Questions 7 and 8



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

- A(1, 1/2)
- B(1/2, 1)
- C(-1/2, 3/4)
- D(-1, 1/2)
- E(-1, -1/4)
- F(-1/2, -1/4)
- G(1/2, -3/4)
- H(1, -1/4)

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 $\frac{dy}{dx} = -(x - \frac{1}{2})(y - \frac{1}{2})$

$\int \frac{1}{2} dy = \int (x - \frac{1}{2}) dx$
 $\ln(y + \frac{1}{2}) = \frac{x^2 - x}{2} + C$
 $\ln(y + \frac{1}{2}) = \frac{x^2 - x}{2} + C$

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

- A(1, 1/2)
- B(1/2, 1)
- C(-1/2, 3/4)
- D