

TEMA 2. REPASO DE EDP.

1. Clasifica las siguientes ecuaciones en derivadas parciales de segundo orden:

(a)

$$u_{xx} - 6u_{xy} + 9u_{yy} = u_y$$

(b)

$$u_{xx} + 3u_{xy} + u_{yy} = 0$$

(c)

$$u_{xx} + 6u_{xy} - 9u_{yy} = u$$

(d)

$$u_{xx} - 9u_{tt} = 0$$

(e)

$$u_{xx} + xyu_{xy} + u_{yy} = y$$

(f)

$$u_{xx} + 3xu_{xy} - u_{yy} = 10$$

(g)

$$y_{tt} + \alpha y_{xt} + \frac{1}{4}(\alpha^2 - 4)y_{xx} = 0$$

(h)

$$y_{tt} = (1 + \epsilon x)^\alpha y_{xx}$$

(i)

$$u_{xx} + xu_{yy} = 0$$

(j)

$$u_{xx} + 3x^2y^2u_{xy} + (x + y)u_{yy} = u$$