## S4 - 17B. Devoir 1

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## Exercice 2:

Resolitopm des equations differentielles non lineraires de 2nd ordre

1. (E): 
$$y' = xy' + \sqrt{(1 + (y')^2)}$$

2. (E): 
$$x = yy' + (y')^3$$

3. (E): 
$$2xy' = y + y'$$

## Exercice 3:

Resolution des equations differentielles du second ordre:

1. (E): 
$$y'' + y = xe^x + 2e^{-x}$$
 ou  $y(0) = y'(0) = 1$ 

2. (E): 
$$y'' - 4y' + y = xe^{2x}$$

3. (E): 
$$y'' + 2y' + 3y = \cos x$$
 ou  $y(0) = y'(0) = 0$ 

4. (E): 
$$y'' - 4y + 13y = cos(3x)$$