

ESERCIZI SU EQUAZIONI DIFFERENZIALI A VARIABILI SEPARABILI

$$1) y' = \frac{-y}{x \ln y}; \quad y(e^{-1}) = e^2$$

$$2) y' = \frac{-y}{2x \ln y}; \quad y(e^{-1}) = e^2$$

$$3) y' = \frac{1+y^2}{2x}; \quad y(e) = 1$$

$$4) y' = -\frac{(1+y)^2}{2x}; \quad y(e) = 1$$

$$5) y' = \frac{xy^2}{x^2-1}; \quad y(2) = -1$$

$$6) y' = \frac{xy^2}{x^2-5}; \quad y(3) = -1$$

$$7) y' = \frac{xy^2}{x^2-2}; \quad y(2) = -1$$

$$8) y' = (6x-1)\left(\frac{y}{2} - \frac{4}{y}\right); \quad y(0) = -3$$

$$9) y' = \frac{e^{-y^2}}{2xy}; \quad y(1) = \sqrt{\ln 3}$$

$$10) y' = \frac{e^{-y^2}}{xy}; \quad y(1) = \sqrt{\ln 4}$$

$$11) y'(x) = \frac{y(\ln y)^2}{(x+2)^2}; \quad y(-6) = e^2$$

$$12) y'(x) = \frac{y(\ln y)^2}{(x-2)^2}; \quad y(1) = e^2$$

$$13) y'(x) = \frac{y(\ln y)^2}{(x-1)^2}; \quad y(0) = e^2$$

$$14) y'(x) = \frac{y(\ln y)^2}{(x+1)^2}; \quad y(1) = e^2$$

$$15) y'(x) = \frac{4e^{2x}}{2y+3}; \quad y(0) = -2$$

$$16) y'(x) = \frac{1}{2xy+3x}; \quad y(1) = -1$$

$$17) y'(x) = \frac{1}{2xy+3x}; \quad y(1) = -2$$

$$18) y'(x) = \frac{1}{4}(6x-5)e^{-y}; \quad y(2) = 0$$

$$19) y'(x) = \frac{1}{2}(6x-5)e^{-2y}; \quad y(2) = 0$$

$$20) y' = \frac{6x^2}{4y+3}; \quad y(1) = -1$$

$$21) y' = \frac{3x^2}{4y+3}; \quad y(1) = -1$$

$$22) y'(x) = \frac{2xy(x)-5y(x)}{[\ln(y(x))]^2}; \quad y(0) = e^2$$

$$23) y'(x) = \frac{2xy(x)-6y(x)}{[\ln(y(x))]^3}; \quad y(0) = e^2$$

$$24) y'(x) = \frac{2xy(x)-4y(x)}{\ln(y(x))}; \quad y(0) = e^2$$

$$25) y' = \frac{6x^2}{4y+3}; \quad y(1) = -1$$

$$26) y' = \frac{3x^2}{4y+3}; \quad y(1) = -1$$

$$27) y'(x) = \frac{(y(x))^6}{x-3}, \quad y(2) = 1$$

$$28) y'(x) = \frac{(y(x))^4}{x-3}, \quad y(2) = 1$$

$$29) y'(x) = \frac{(y(x))^5}{x-3}, \quad y(1) = 1$$

$$30) y'(x) = \frac{(y(x))^3}{x-3}, \quad y(2) = \frac{1}{2}$$

$$31) y'(x) = \frac{3x^2(y^4-15)}{4y^3}; \quad y(-2) = 2$$

$$32) y'(x) = \frac{1-4\ln x}{xe^{-y(x)}}; \quad y(e) = 0$$

$$33) y'(x) = \frac{1+2\ln x}{xe^{y(x)}}; \quad y(e) = \ln 2$$

$$34) y' = \frac{e^x}{2y+3}; \quad y(0) = -1$$

$$35) y'(x) = (4x-1)(y(x))^3, \quad y\left(\frac{1}{2}\right) = 1$$

$$36) y'(x) = (2x+1)(y(x))^3, \quad y(-3) = \frac{1}{2}$$

$$37) y'(x) = \frac{e^{-2y(x)}}{x+3}; \quad y(1) = 0$$

$$38) y'(x) = \frac{e^{-3y(x)}}{x+2}; \quad y(1) = 0$$

$$39) y' = \frac{-y \ln^2 y}{(x+1)^2}, \quad y(1) = e^2$$

$$40) y' = \frac{2y \ln^2 y}{(x+2)^2}, \quad y(-1) = e$$