

ESERCIZI SU EQUAZIONI DIFFERENZIALI LINEARI DEL PRIMO ORDINE

$$1. y' = \frac{x+3}{x}y + 4x^3 e^{3x}; \quad y(1) = 3$$

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

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

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

$$5. y' = -\cot x \cdot y + 8\cos^2 x, \quad y\left(\frac{\pi}{2}\right) = 2$$

$$6. y' = \tan x \cdot y + 8\sin^2 x, \quad y(0) = 2$$

$$7. y' = \frac{x+1}{x}y - x^2, \quad y(2) = 4$$

$$8. y' = \frac{-4xy}{x^2+2} + 6x; \quad y(0) = 3$$

$$9. y' = \frac{-4xy}{x^2-1} + 6x; \quad y(0) = 3$$

$$10. y' = \frac{2x^2-3}{x}y + \frac{4}{x^2}; \quad y(1) = -3$$

$$11. y' = \frac{3+2x^2}{x}y + 4x^4; \quad y(1) = -3$$

$$12. y' = \frac{1+2x^2}{x}y + 4x^2; \quad y(1) = -3$$

$$13. y'(x) = \frac{2x+3}{x}y(x) + 2x^3; \quad y(1) = -2$$

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

$$15. y' = \frac{x}{x+2}y - e^x; \quad y(1) = e^2$$

$$16. y'(x) = \frac{2}{x+3}y(x) + (x+3)^3; \quad y(0) = 0$$

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

$$18. y'(x) = \frac{2x+5}{x^2+5x}y(x) + x^3 + 5x^2; \quad y(-1) = -1$$

$$19. y'(x) = \sin x \cdot y(x) + e^{x-\cos x}, \quad y(0) = 3$$

$$20. y'(x) = \frac{xy(x)}{1-x} + e^{-x}, \quad y(0) = 1$$

$$21. y'(x) = \frac{1}{2} \frac{xy(x)}{x+2} + e^{-x}, \quad y(0) = \frac{1}{9}$$

$$22. y'(x) = \frac{1}{3} \frac{xy(x)}{x+3} + e^{-x}, \quad y(0) = \frac{1}{16}$$

$$23. y'(x) = \frac{3x-1}{x}y(x) + \frac{e^{2x}}{x}; \quad y(1) = e^2$$

$$24. y'(x) = \frac{2x-1}{x}y(x) + \frac{e^x}{x}; \quad y(1) = e$$

$$25. y'(x) = \frac{x-3}{x}y(x) + \frac{1}{x^3}, \quad y(1) = -1$$

$$26. y'(x) = \frac{x+2}{x}y(x) + x^2, \quad y(1) = -1$$

$$27. y'(x) = \frac{xy(x)}{1-x} + e^{-x}, \quad y(0) = 1$$

$$28. y'(x) = \frac{xy(x)}{x+1}, \quad y(0) = \frac{1}{4}$$