

ESERCIZI SU EQUAZIONI DIFFERENZIALI LINEARI CON COEFFICIENTI COSTANTI

- 1) $3y'' + 7y' + 2y = (12x + 1)e^x$
- 2) $4y'' + 5y' - 6y = (18x + 9)e^x$
- 3) $5y'' + 7y' - 6y = (18x + 9)e^x$
- 4) $6y'' + 7y' - 10y = (18x + 9)e^x$
- 5) $y'' - y' - 6y = 18x^2$; $y(0) = 1, y'(0) = 0$
- 6) $2y'' + y' - 10y = 100x + 21e^x$; $y(0) = 4, y'(0) = 3$
- 7) $y'' - 2y' - 15y = 75x + 32e^x$; $y(0) = -\frac{4}{3}, y'(0) = 1$
- 8) $y'' + y' - 20y = 400x + 18e^x$; $y(0) = 0, y'(0) = 2$
- 9) $y'' - y' - 30y = 150x + 90e^x$; $y(0) = 1, y'(0) = 4$
- 10) $y'' + 6y' + 9y = 2e^{-3x}$; $y(0) = -2, y'(0) = 1$
- 11) $y'' + 4y' + 4y = 12e^{-2x}$; $y(0) = -2, y'(0) = 1$
- 12) $y'' - 4y' + 4y = 12e^{2x}$; $y(0) = -2, y'(0) = 1$
- 13) $4y'' - 4y' + y = 24e^{\frac{x}{2}}$; $y(0) = -4, y'(0) = 2$
- 14) $4y'' + 4y' + y = 16e^{-\frac{x}{2}}$; $y(0) = -3, y'(0) = 2$
- 15) $4y'' + 4y' - 3y = 9x^2 - 6x - 27$; $y(0) = -3, y'(0) = 2$
- 16) $4y'' + 4y' + 5y = 5x^2 - 2x + 10$; $y(0) = 2, y'(0) = 0$
- 17) $y'' - y' - 6y = 18x^2$; $y(0) = 1, y'(0) = 0$
- 18) $y'' - 4y = (4x - 3)e^{2x}$, $y(0) = 1, y'(0) = -1$
- 19) $4y'' + 3y' - 10y = 100x$; $y(0) = -2, y'(0) = 1$
- 20) $y'' + 4y' = 8 + 32x^2$; $y(0) = 2, y'(0) = -1$
- 21) $2y'' + y' = 2 + x^2$; $y(0) = 3, y'(0) = 0$
- 22) $3y'' + 2y' = 4x^2 + 4x$; $y(0) = 3, y'(0) = 2$
- 23) $3y'' - 2y' = 4x^2 + 4x$; $y(0) = 3, y'(0) = 2$
- 24) $2y'' - 7y' + 6y = (2x + 3)e^{2x}$
- 25) $2y'' + 7y' + 6y = (2x + 3)e^{-2x}$
- 26) $y'' - 3y' = 18x + 6$
- 27) $3y'' + 5y' - 2y = 7e^{-2x}$
- 28) $3y'' + 5y' - 2y = 7e^{\frac{1}{3}x}$
- 29) $2y'' - 5y' - 3y = 7e^{\frac{1}{2}x}$
- 30) $2y'' - 5y' - 3y = 7e^{3x}$
- 31) $4y'' + y = 2xe^{\frac{1}{2}x}$
- 32) $9y'' + y = 2xe^{\frac{1}{3}x}$
- 33) $9y'' + 6y' + y = 18(x - 2)e^{-\frac{x}{3}}$
- 34) $4y'' + 4y' + y = 24(x + 1)e^{-\frac{x}{2}}$
- 35) $9y'' - 6y' + y = 18(x - 2)e^{\frac{x}{3}}$

36) $4y'' - 4y' + y = 24(x+1)e^{\frac{x}{2}}$

37) $20y'' - 4y' + y = x^2$

38) $13y'' - 4y' + y = 50xe^x$

39) $y''(x) + 6y'(x) + 10y(x) = 0$; $y(0) = 3$, $y'(0) = 2$

40) $2y''(x) + 2y'(x) + y(x) = 0$; $y(0) = 2$, $y'(0) = 3$

41) $y'' + y' - 6y = 4e^x + 12$

42) $y'' + 9y = 32x \operatorname{sen} x$

43) $y'' + y' - 12y = 49xe^{3x}$

44) $2y'' + 2y' + 5y = 27xe^x$

45) $3y'' + 4y' = 8$, $y(0) = 1$, $y'(0) = 6$

46) $4y'' + 3y' = 6$, $y(0) = 0$, $y'(0) = -1$

47) $8y'' + 7y' - y = 81xe^{-x}$

48) $7y'' + 6y' - y = 64xe^{-x}$

49) $y'' + y' - 6y = 4e^x + 12$

50) $y'' + 9y = 32x \operatorname{sen} x$

51) $y'' + y' - 12y = 49xe^{3x}$

52) $2y'' + 2y' + 5y = 27xe^x$

53) $3y'' - 8y' + 5y = 18e^{2x}$, $y(0) = 0$, $y'(0) = 6$

54) $5y'' - 8y' + 5y = 18e^{2x}$, $y(0) = 0$, $y'(0) = 6$