

Řešte rovnice ve tvaru totálního diferenciálu.

Není-li řečeno jinak, hledejte integrační faktor jako funkci x nebo y .

24. $\frac{dx}{y} - \frac{x dy}{y^2} = 0.$

25. $\frac{y dx}{2\sqrt{x}} + \sqrt{x} dy = 0.$

26. $-\frac{y dx}{x^2+y^2} + \frac{x dy}{x^2+y^2} = 0.$

27. $\cos(x+1) dx = 0.$

28. $\frac{\sqrt{y} dx}{\sqrt{-(x-1)(x+1)}} + \frac{(\arcsin(x)+2\sqrt{y}) dy}{2\sqrt{y}} = 0.$

29. $-ye^{\frac{y}{x}} x^{-2} dx + e^{\frac{y}{x}} x^{-1} dy = 0.$

30. $\left(\frac{y}{x^2} - x^{-2}\right) dx + \frac{dy}{x} = 0.$

31. $(y^2 - y) dx + xy dy = 0.$

32. $-\sin(x) \cos(y) dx - (\cos(y))^2 dy = 0.$

33. $-\sin(xy) dx - \frac{\sin(xy)x dy}{y} = 0.$

34. $(x^{-1} + \frac{y}{x}) dx + (1 + x^{-1}) dy = 0.$

35. $\left(\frac{2x}{y^2} - \frac{1}{yx^2}\right) dx + \left(3 + \frac{1}{y^2x}\right) dy = 0.$

36. $\left(-\frac{y^2}{x^2} + 1\right) dx + \left(2y^3 - \frac{2x}{y}\right) dy = 0.$

37. $\frac{dx}{xy} + 2 \frac{dy}{x} = 0, \mu = \mu(xy).$

38. $-y^3 x^2 dx + \left(-x^2 - x^3 y^2 - \frac{2x^2}{y}\right) dy = 0, \mu = \mu(xy).$

39. $\left(-\frac{1}{x^4 y^3} + \frac{1}{x^4 y^2}\right) dx - \frac{dy}{y^4 x^3} = 0, \mu = \mu(xy).$

40. $\frac{dx}{xy^3} + \frac{dy}{yx^3} = 0, \mu = \mu(xy).$

41. $\frac{x^3 dx}{y^2} - \frac{x^2 dy}{y^5} = 0, \mu = \mu(x/y).$

42. $\left(-\frac{y}{x^3} + \frac{y^3}{x}\right) dx + 2y^2 dy = 0, \mu = \mu(y/x).$

43. $\frac{x dx}{y} + \left(-\frac{x^3}{y^5} - \frac{2x^2}{y^2}\right) dy = 0, \mu = \mu(x/y).$

44. $\left(x^{-1} + \frac{y^2}{x^3}\right) dx + \left(-y^{-1} - \frac{y}{x^2}\right) dy = 0, \mu = \mu(y/x).$

45. $\left(\frac{y}{x} - \frac{y \cos(x)}{x}\right) dx + \frac{y dy}{x} = 0.$

46. $(y^{-1} + x^{-1}) dx + (y^{-1} + x^{-1}) dy = 0, \mu = \mu(xy).$