Дифференциальные уравнения первого порядка.

1. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = y + e^x$, $(y)dx + (x+2y)dy = 0$.

2. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2xy)dx + (x^2+2y)dy = 0$.

3. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = y + e^{-x}$, $(2x+3y)dx + (3x)dy = 0$.

4. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}$, $(2x-y)dx + (-x+4y)dy = 0$.

5. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2x+y)dx + (x-2y)dy = 0$.

6. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}$, $(4x+2y)dx + (2x-2y)dy = 0$.

7. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = -y + 2xy^3$, $(y)dx + (x-4y)dy = 0$.

8. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = xy + y^3e^{-x^2}$, $(2xy+1)dx + (x^2)dy = 0$.

9. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}$, $(2x-3y)dx + (-3x)dy = 0$.

10. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = -y + \frac{x}{y}$, $(2x+2y)dx + (2x-4y)dy = 0$.

11. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{y}{x} - \frac{x}{1-x^2}$, $(2x-y)dx + (-x-2y)dy = 0$.

12. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = 3x+2y$, $(4x-2y)dx + (-2x-2y)dy = 0$.

13. $y' = \frac{1+2x}{y^3}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = -\frac{y}{x} - \frac{3}{x}$, $(2x+3y)dx + (3x-2y)dy = 0$.

14. $y' = \frac{y}{x^3}$, $y' = -\frac{x+y}{x}$, $y' = x+y$, $(-4x+y)dx + (x-2y)dy = 0$.

15. $y' = \frac{y^2}{x^2+1}$, $y' = \frac{2xy}{x^2-y^2}$, $y' = x-y$, $(-2x+y)dx + (x+2y)dy = 0$.

16. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = y + e^x$, $(y)dx + (x+2y)dy = 0$.

---

17. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2xy)dx + (x^2+2y)dy = 0$.

---

18. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = y + e^{-x}$, $(2x+3y)dx + (3x)dy = 0$.

---

19. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}$, $(2x-y)dx + (-x+4y)dy = 0$.

---

20. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2x+y)dx + (x-2y)dy = 0$.

---

21. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}$, $(4x+2y)dx + (2x-2y)dy = 0$.

---

22. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = -y + 2xy^3$, $(y)dx + (x-4y)dy = 0$.

---

23. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = xy + y^3e^{-x^2}$, $(2xy+1)dx + (x^2)dy = 0$.

---

24. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}$, $(2x-3y)dx + (-3x)dy = 0$.

---

25. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = -y + \frac{x}{y}$, $(2x+2y)dx + (2x-4y)dy = 0$.

---

26. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = y + e^x$, $(y)dx + (x+2y)dy = 0$.

---

27. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2xy)dx + (x^2+2y)dy = 0$.

---

28. $y' = \frac{xy^2+x}{(y-x^2y)}$, $y' = \frac{y(x+y)}{x^2}$, $y' = y + e^{-x}$, $(2x+3y)dx + (3x)dy = 0$.

---

29. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}$, $(2x-y)dx + (-x+4y)dy = 0$.

---

30. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2x+y)dx + (x-2y)dy = 0$.

---

31. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}$, $(4x+2y)dx+(2x-2y)dy = 0$.

---

32. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = -y + 2xy^3$, $(y)dx + (x-4y)dy = 0$.

---

33. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = xy + y^3e^{-x^2}$, $(2xy+1)dx + (x^2)dy = 0$.

---

34. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}$, $(2x-3y)dx + (-3x)dy = 0$.

---

35. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = -y + \frac{x}{y}$, $(2x+2y)dx + (2x-4y)dy = 0$.

---

36. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{y}{x} - \frac{x}{1-x^2}$, $(2x-y)dx+(-x-2y)dy = 0$.

---

37. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = 3x+2y$, $(4x-2y)dx+(-2x-2y)dy = 0$.

---

38. $y' = \frac{1+2x}{y^3}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = -\frac{y}{x} - \frac{3}{x}$, $(2x+3y)dx+(3x-2y)dy = 0$.

---

39. $y' = \frac{y}{x^3}$, $y' = -\frac{x+y}{x}$, $y' = x+y$, $(-4x+y)dx + (x-2y)dy = 0$.

---

40. $y' = \frac{y^2}{x^2+1}$, $y' = \frac{2xy}{x^2-y^2}$, $y' = x-y$, $(-2x+y)dx + (x+2y)dy = 0$.

---

41. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = y + e^x$, $(y)dx + (x+2y)dy = 0$.

---

42. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2xy)dx + (x^2+2y)dy = 0$.

---

43. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = y + e^{-x}$, $(2x+3y)dx + (3x)dy = 0$.

---

44. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}$, $(2x-y)dx + (-x+4y)dy = 0$.

---

45. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2x+y)dx + (x-2y)dy = 0$.

---

46. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}$, $(4x+2y)dx + (2x-2y)dy = 0$.

---

47. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = -y + 2xy^3$, $(y)dx + (x-4y)dy = 0$.

---

48. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = xy + y^3e^{-x^2}$, $(2xy+1)dx + (x^2)dy = 0$.

---

49. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}$, $(2x-3y)dx + (-3x)dy = 0$.

---

50. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = -y + \frac{x}{y}$, $(2x+2y)dx + (2x-4y)dy = 0$.

---

51. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = y + e^x$, $(y)dx + (x+2y)dy = 0$.

---

52. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2xy)dx + (x^2+2y)dy = 0$.

---

53. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = y + e^{-x}$, $(2x+3y)dx + (3x)dy = 0$.

---

54. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}$, $(2x-y)dx + (-x+4y)dy = 0$.

---

55. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2x+y)dx + (x-2y)dy = 0$.

---

56. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}$, $(4x+2y)dx + (2x-2y)dy = 0$.

---

57. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = -y + 2xy^3$, $(y)dx + (x-4y)dy = 0$.

---

58. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = xy + y^3e^{-x^2}$, $(2xy+1)dx + (x^2)dy = 0$.

---

59. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}$, $(2x-3y)dx + (-3x)dy = 0$.

---

60. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = -y + \frac{x}{y}$, $(2x+2y)dx + (2x-4y)dy = 0$.

---

61. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{y}{x} - \frac{x}{1-x^2}$, $(2x-y)dx + (-x-2y)dy = 0$.

---

62. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = 3x + 2y$, $(4x-2y)dx + (-2x-2y)dy = 0$.

---

63. $y' = \frac{1+2x}{y^3}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = -\frac{y}{x} - \frac{3}{x}$, $(2x+3y)dx + (3x-2y)dy = 0$.

---

64. $y' = \frac{y}{x^3}$, $y' = -\frac{x+y}{x}$, $y' = x + y$, $(-4x+y)dx + (x-2y)dy = 0$.

---

65. $y' = \frac{y^2}{x^2+1}$, $y' = \frac{2xy}{x^2-y^2}$, $y' = x - y$, $(-2x+y)dx + (x+2y)dy = 0$.

---

66. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = y + e^x$, $(y)dx + (x+2y)dy = 0$.

---

67. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2xy)dx + (x^2+2y)dy = 0$.

---

68. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = y + e^{-x}$, $(2x+3y)dx + (3x)dy = 0$.

---

69. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}$, $(2x-y)dx + (-x+4y)dy = 0$.

---

70. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2x+y)dx + (x-2y)dy = 0$.

---

71. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}$, $(4x+2y)dx + (2x-2y)dy = 0$.

---

72. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = -y + 2xy^3$, $(y)dx + (x-4y)dy = 0$.

---

73. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = xy + y^3e^{-x^2}$, $(2xy+1)dx + (x^2)dy = 0$.

---

74. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}$, $(2x-3y)dx + (-3x)dy = 0$.

---

75. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = -y + \frac{x}{y}$, $(2x+2y)dx + (2x-4y)dy = 0$.

---

76. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = y + e^x$, $(y)dx + (x+2y)dy = 0$.

---

77. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2xy)dx + (x^2+2y)dy = 0$.

---

78. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = y + e^{-x}$, $(2x+3y)dx + (3x)dy = 0$.

---

79. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}$, $(2x-y)dx + (-x+4y)dy = 0$.

---

80. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{2y}{x} - x$, $(2x+y)dx + (x-2y)dy = 0$.

---

81. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}$, $(4x+2y)dx + (2x-2y)dy = 0$.

---

82. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = -y + 2xy^3$, $(y)dx + (x-4y)dy = 0$.

---

83. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = xy + y^3e^{-x^2}$, $(2xy+1)dx + (x^2)dy = 0$.

---

84. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}$, $(2x-3y)dx + (-3x)dy = 0$.

---

85. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = -y + \frac{x}{y}$, $(2x+2y)dx + (2x-4y)dy = 0$.

---

86. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{y}{x} - \frac{x}{1-x^2}$, $(2x-y)dx + (-x-2y)dy = 0$.

---

87. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = 3x + 2y$, $(4x-2y)dx + (-2x-2y)dy = 0$.

---

88. $y' = \frac{1+2x}{y^3}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = -\frac{y}{x} - \frac{3}{x}$, $(2x+3y)dx + (3x-2y)dy = 0$.

---

89. $y' = \frac{y}{x^3}$, $y' = -\frac{x+y}{x}$, $y' = x + y$, $(-4x+y)dx + (x-2y)dy = 0$.

---

90. $y' = \frac{y^2}{x^2+1}$, $y' = \frac{2xy}{x^2-y^2}$, $y' = x - y$, $(-2x+y)dx + (x+2y)dy = 0$.

---

91. $y' = \frac{(1+x)y}{(y-1)x}, \quad y' = e^{\frac{y}{x}} + \frac{y}{x}, \quad y' = y + e^x, \quad (y)dx + (x+2y)dy = 0.$

---

92. $y' = \frac{y}{(1+x^2)x}, \quad y' = \frac{y}{x}\ln\frac{y}{x}, \quad y' = \frac{2y}{x} - x, \quad (2xy)dx + (x^2+2y)dy = 0.$

---

93. $y' = \frac{xy^2+x}{(y-x^2y)}, \quad \frac{y(x+y)}{x^2}, \quad y' = y + e^{-x}, \quad (2x+3y)dx + (3x)dy = 0.$

---

94. $y' = \frac{1-x^2}{xy}, \quad y' = \frac{y(x-y)}{x^2}, \quad y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}, \quad (2x-y)dx + (-x+4y)dy = 0.$

---

95. $y' = \frac{1-2x}{y^2}, \quad y' = \sin(\frac{x+y}{x}) + \frac{y}{x}, \quad y' = \frac{2y}{x} - x, \quad (2x+y)dx + (x-2y)dy = 0.$

---

96. $y' = \frac{-y}{x^2}, \quad y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}, \quad y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}, \quad (4x+2y)dx + (2x-2y)dy = 0.$

---

97. $y' = \frac{(1+x)y}{(y-1)x}, \quad y' = e^{\frac{y}{x}} + \frac{y}{x}, \quad y' = -y + 2xy^3, \quad (y)dx + (x-4y)dy = 0.$

---

98. $y' = \frac{y}{(1+x^2)x}, \quad y' = \frac{y}{x}\ln\frac{y}{x}, \quad y' = xy + y^3e^{-x^2}, \quad (2xy+1)dx + (x^2)dy = 0.$

---

99. $y' = \frac{xy^2+x}{(y-x^2y)}, \quad \frac{y(x+y)}{x^2}, \quad y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}, \quad (2x-3y)dx + (-3x)dy = 0.$

---

100. $y' = \frac{1-x^2}{xy}, \quad y' = \frac{y(x-y)}{x^2}, \quad y' = -y + \frac{x}{y}, \quad (2x+2y)dx + (2x-4y)dy = 0.$

---

101. $y' = \frac{(1+x)y}{(y-1)x}, \quad y' = e^{\frac{y}{x}} + \frac{y}{x}, \quad y' = y + e^x, \quad (y)dx + (x+2y)dy = 0.$

---

102. $y' = \frac{y}{(1+x^2)x}, \quad y' = \frac{y}{x}\ln\frac{y}{x}, \quad y' = \frac{2y}{x} - x, \quad (2xy)dx + (x^2+2y)dy = 0.$

---

103. $y' = \frac{xy^2+x}{(y-x^2y)}, \quad \frac{y(x+y)}{x^2}, \quad y' = y + e^{-x}, \quad (2x+3y)dx + (3x)dy = 0.$

---

104. $y' = \frac{1-x^2}{xy}, \quad y' = \frac{y(x-y)}{x^2}, \quad y' = y\,\mathrm{tg}\,x + \frac{2x}{cosx}, \quad (2x-y)dx + (-x+4y)dy = 0.$

---

105. $y' = \frac{1-2x}{y^2}, \quad y' = \sin(\frac{x+y}{x}) + \frac{y}{x}, \quad y' = \frac{2y}{x} - x, \quad (2x+y)dx + (x-2y)dy = 0.$

---

106. $y' = \frac{-y}{x^2}$, $y' = \frac{y}{x} + \frac{\sqrt{x^2+y^2}}{x}$, $y' = -\frac{2y}{x} - \frac{e^{-x^2}}{x}$, $(4x+2y)dx+(2x-2y)dy = 0$.

---

107. $y' = \frac{(1+x)y}{(y-1)x}$, $y' = e^{\frac{y}{x}} + \frac{y}{x}$, $y' = -y + 2xy^3$, $(y)dx + (x-4y)dy = 0$.

---

108. $y' = \frac{y}{(1+x^2)x}$, $y' = \frac{y}{x}\ln\frac{y}{x}$, $y' = xy + y^3e^{-x^2}$, $(2xy+1)dx + (x^2)dy = 0$.

---

109. $y' = \frac{xy^2+x}{(y-x^2y)}$, $\frac{y(x+y)}{x^2}$, $y' = -\frac{2y}{x} + \frac{2\sqrt{y}}{cos^2x}$, $(2x-3y)dx + (-3x)dy = 0$.

---

110. $y' = \frac{1-x^2}{xy}$, $y' = \frac{y(x-y)}{x^2}$, $y' = -y + \frac{x}{y}$, $(2x+2y)dx + (2x-4y)dy = 0$.

---

111. $y' = \frac{1-2x}{y^2}$, $y' = \sin(\frac{x+y}{x}) + \frac{y}{x}$, $y' = \frac{y}{x} - \frac{x}{1-x^2}$, $(2x-y)dx+(-x-2y)dy = 0$.

Дифференциальные уравнения второго порядка.

1. $(1-x^2)y'' = xy'$.
2. $2yy'' + (y')^2 + (y')^4 = 0$.
3. $y'' + y' \operatorname{tg} x = \sin 2x$.
4. $y'' + \frac{1}{x}y' = x^2$.
5. $1 + (y')^2 + yy'' = 0$.
6. $y''(1+y) - 5(y')^2 = 0$.
7. $xy'' + 2y' = x^2$.
8. $y'' \operatorname{tg} x = 2(y')^2$.
9. $y'' - 2y' \operatorname{tg} x = \sin x$.
10. $3yy'' + (y')^2 = 0$.
11. $y'' = \frac{1}{2y'}$.
12. $y''x \ln x = y'$.
13. $y'' = 1 + y'^2$.
14. $\operatorname{tg} xy'' = y' + 1$.
15. $y'' = x + \frac{y'}{x}$.
16. $xy'' - y' = x^2 e^x$.
17. $y'' - 2y' \operatorname{ctg} x = \sin^2 x$.
18. $x^2y'' + xy' = 1$.
19. $(y'')^2 = y'$.
20. $y'' - y' \operatorname{tg} x = \sin 2x$.
21. $2xy'' = y'$.
22. $(1+x^2)y''2xy' = x^3$.
23. $yy'' + (y')^2 = 0$.
24. $yy'' - (y')^2 = 0$.
25. $yy'' - (y')^2 = y^2y'$.
26. $(1-x^2)y'' = xy'$.
27. $2yy'' + (y')^2 + (y')^4 = 0$.
28. $y'' + y' \operatorname{tg} x = \sin 2x$.
29. $y'' + \frac{1}{x}y' = x^2$.
30. $1 + (y')^2 + yy'' = 0$.

31. $y''(1+y) - 5(y')^2 = 0.$

32. $xy'' + 2y' = x^2.$

33. $y'' \operatorname{tg} x = 2(y')^2.$

34. $y'' - 2y' \operatorname{tg} x = \sin x.$

35. $3yy'' + (y')^2 = 0.$

36. $y'' = \frac{1}{2y'}.$

37. $y''x \ln x = y'.$

38. $y'' = 1 + y'^2.$

39. $\operatorname{tg} xy'' = y' + 1.$

40. $y'' = x + \frac{y'}{x}.$

41. $xy'' - y' = x^2 e^x.$

42. $y'' - 2y' \operatorname{ctg} x = \sin^2 x.$

43. $x^2 y'' + xy' = 1.$

44. $(y'')^2 = y'.$

45. $y'' - y' \operatorname{tg} x = \sin 2x.$

46. $2xy'' = y'.$

47. $(1+x^2)y''2xy' = x^3.$

48. $yy'' + (y')^2 = 0.$

49. $yy'' - (y')^2 = 0.$

50. $yy'' - (y')^2 = y^2 y'.$

51. $(1-x^2)y'' = xy'.$

52. $2yy'' + (y')^2 + (y')^4 = 0.$

53. $y'' + y' \operatorname{tg} x = \sin 2x.$

54. $y'' + \frac{1}{x}y' = x^2.$

55. $1 + (y')^2 + yy'' = 0.$

56. $y''(1+y) - 5(y')^2 = 0.$

57. $xy'' + 2y' = x^2.$

58. $y'' \operatorname{tg} x = 2(y')^2.$

59. $y'' - 2y' \operatorname{tg} x = \sin x.$

60. $3yy'' + (y')^2 = 0.$

61. $y'' = \frac{1}{2y'}.$

62. $y''x \ln x = y'.$

63. $y'' = 1 + y'^2$.

64. $\operatorname{tg} xy'' = y' + 1$.

65. $y'' = x + \frac{y'}{x}$.

66. $xy'' - y' = x^2 e^x$.

67. $y'' - 2y' \operatorname{ctg} x = \sin^2 x$.

68. $x^2 y'' + xy' = 1$.

69. $(y'')^2 = y'$.

70. $y'' - y' \operatorname{tg} x = \sin 2x$.

71. $2xy'' = y'$.

72. $(1 + x^2)y''2xy' = x^3$.

73. $yy'' + (y')^2 = 0$.

74. $yy'' - (y')^2 = 0$.

75. $yy'' - (y')^2 = y^2 y'$.

76. $(1 - x^2)y'' = xy'$.

77. $2yy'' + (y')^2 + (y')^4 = 0$.

78. $y'' + y' \operatorname{tg} x = \sin 2x$.

79. $y'' + \frac{1}{x}y' = x^2$.

80. $1 + (y')^2 + yy'' = 0$.

81. $y''(1 + y) - 5(y')^2 = 0$.

82. $xy'' + 2y' = x^2$.

83. $y'' \operatorname{tg} x = 2(y')^2$.

84. $y'' - 2y' \operatorname{tg} x = \sin x$.

85. $3yy'' + (y')^2 = 0$.

86. $y'' = \frac{1}{2y'}$.

87. $y''x \ln x = y'$.

88. $y'' = 1 + y'^2$.

89. $\operatorname{tg} xy'' = y' + 1$.

90. $y'' = x + \frac{y'}{x}$.

91. $xy'' - y' = x^2 e^x$.

92. $y'' - 2y' \operatorname{ctg} x = \sin^2 x$.

93. $x^2 y'' + xy' = 1$.

94. $(y'')^2 = y'$.

95. $y'' - y' \operatorname{tg} x = \sin 2x$.

96. $2xy'' = y'$.

97. $(1 + x^2)y''2xy' = x^3$.

98. $yy'' + (y')^2 = 0$.

99. $yy'' - (y')^2 = 0$.

100. $yy'' - (y')^2 = y^2y'$.

101. $(1 - x^2)y'' = xy'$.

102. $2yy'' + (y')^2 + (y')^4 = 0$.

103. $y'' + y' \operatorname{tg} x = \sin 2x$.

104. $y'' + \frac{1}{x}y' = x^2$.

105. $1 + (y')^2 + yy'' = 0$.

106. $y''(1 + y) - 5(y')^2 = 0$.

107. $xy'' + 2y' = x^2$.

108. $y'' \operatorname{tg} x = 2(y')^2$.

109. $y'' - 2y' \operatorname{tg} x = \sin x$.

110. $3yy'' + (y')^2 = 0$.

111. $y'' = \frac{1}{2y'}$.

Линейные дифференциальные уравнения второго порядка.

1. $y'' + 4y' - 12y = 8\sin 2x, \quad y(0) = 0, \quad y'(0) = 0.$
2. $y'' - 6y' + 9y = x^2 - x + 3, \quad y(0) = \frac{3}{4}, \quad y'(0) = \frac{1}{27}.$
3. $y'' + 4y = e^{-2x}, \quad y(0) = 0, \quad y'(0) = 0.$
4. $y'' - 2y + 5y = xe^{2x}, \quad y(0) = 1, \quad y'(0) = 0.$
5. $y'' + 5y' + 6y = 12\cos 2x, \quad y(0) = 1, \quad y'(0) = 3.$
6. $y'' - 5y' + 6y = (12x - 7)e^{-x}, \quad y(0) = 0, \quad y'(0) = 0.$
7. $y'' - 4y' + 13y = 26x + 5, \quad y(0) = 1, \quad y'(0) = 0.$
8. $y'' - 4y' = 6x^2 + 1, \quad y(0) = 2, \quad y'(0) = 3.$
9. $y'' - 2y' + y = 16e^x, \quad y(0) = 1, \quad y'(0) = 2.$
10. $y'' + 6y' + 9y = 10e^{-2x}, \quad y(0) = 3, \quad y'(0) = 2.$
11. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$
12. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$
13. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$
14. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$
15. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$
16. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$
17. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$
18. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$
19. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$
20. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$
21. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$
22. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$
23. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$
24. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$
25. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$
26. $y'' + 4y' - 12y = 8\sin 2x, \quad y(0) = 0, \quad y'(0) = 0.$
27. $y'' - 6y' + 9y = x^2 - x + 3, \quad y(0) = \frac{3}{4}, \quad y'(0) = \frac{1}{27}.$
28. $y'' + 4y = e^{-2x}, \quad y(0) = 0, \quad y'(0) = 0.$
29. $y'' - 2y + 5y = xe^{2x}, \quad y(0) = 1, \quad y'(0) = 0.$
30. $y'' + 5y' + 6y = 12\cos 2x, \quad y(0) = 1, \quad y'(0) = 3.$

31. $y'' - 5y' + 6y = (12x - 7)e^{-x}, \quad y(0) = 0, \quad y'(0) = 0.$

32. $y'' - 4y' + 13y = 26x + 5, \quad y(0) = 1, \quad y'(0) = 0.$

33. $y'' - 4y' = 6x^2 + 1, \quad y(0) = 2, \quad y'(0) = 3.$

34. $y'' - 2y' + y = 16e^{x}, \quad y(0) = 1, \quad y'(0) = 2.$

35. $y'' + 6y' + 9y = 10e^{-2x}, \quad y(0) = 3, \quad y'(0) = 2.$

36. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

37. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

38. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

39. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

40. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

41. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

42. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

43. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

44. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

45. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

46. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

47. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

48. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

49. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

50. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

51. $y'' + 4y' - 12y = 8\sin 2x, \quad y(0) = 0, \quad y'(0) = 0.$

52. $y'' - 6y' + 9y = x^2 - x + 3, \quad y(0) = \frac{3}{4}, \quad y'(0) = \frac{1}{27}.$

53. $y'' + 4y = e^{-2x}, \quad y(0) = 0, \quad y'(0) = 0.$

54. $y'' - 2y + 5y = xe^{2x}, \quad y(0) = 1, \quad y'(0) = 0.$

55. $y'' + 5y' + 6y = 12\cos 2x, \quad y(0) = 1, \quad y'(0) = 3.$

56. $y'' - 5y' + 6y = (12x - 7)e^{-x}, \quad y(0) = 0, \quad y'(0) = 0.$

57. $y'' - 4y' + 13y = 26x + 5, \quad y(0) = 1, \quad y'(0) = 0.$

58. $y'' - 4y' = 6x^2 + 1, \quad y(0) = 2, \quad y'(0) = 3.$

59. $y'' - 2y' + y = 16e^{x}, \quad y(0) = 1, \quad y'(0) = 2.$

60. $y'' + 6y' + 9y = 10e^{-2x}, \quad y(0) = 3, \quad y'(0) = 2.$

61. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

62. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

63. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

64. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

65. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

66. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

67. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

68. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

69. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

70. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

71. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

72. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

73. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

74. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

75. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

76. $y'' + 4y' - 12y = 8 \sin 2x, \quad y(0) = 0, \quad y'(0) = 0.$

77. $y'' - 6y' + 9y = x^2 - x + 3, \quad y(0) = \frac{3}{4}, \quad y'(0) = \frac{1}{27}.$

78. $y'' + 4y = e^{-2x}, \quad y(0) = 0, \quad y'(0) = 0.$

79. $y'' - 2y + 5y = xe^{2x}, \quad y(0) = 1, \quad y'(0) = 0.$

80. $y'' + 5y' + 6y = 12 \cos 2x, \quad y(0) = 1, \quad y'(0) = 3.$

81. $y'' - 5y' + 6y = (12x - 7)e^{-x}, \quad y(0) = 0, \quad y'(0) = 0.$

82. $y'' - 4y' + 13y = 26x + 5, \quad y(0) = 1, \quad y'(0) = 0.$

83. $y'' - 4y' = 6x^2 + 1, \quad y(0) = 2, \quad y'(0) = 3.$

84. $y'' - 2y' + y = 16e^x, \quad y(0) = 1, \quad y'(0) = 2.$

85. $y'' + 6y' + 9y = 10e^{-2x}, \quad y(0) = 3, \quad y'(0) = 2.$

86. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

87. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

88. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

89. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

90. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

91. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

92. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

93. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

94. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

95. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

96. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

97. $y'' - 4y' + 3y = x^2 - x + 3, \quad y(0) = 1, \quad y'(0) = -1.$

98. $y'' + 4y' + 3y = x^2 - 1, \quad y(0) = -1, \quad y'(0) = 0.$

99. $y'' - 3y + 2y = x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

100. $y'' + 3y' + 2y = x^2 + 1, \quad y(0) = 1, \quad y'(0) = -1.$

101. $y'' + 4y' - 12y = 8 \sin 2x, \quad y(0) = 0, \quad y'(0) = 0.$

102. $y'' - 6y' + 9y = x^2 - x + 3, \quad y(0) = \frac{3}{4}, \quad y'(0) = \frac{1}{27}.$

103. $y'' + 4y = e^{-2x}, \quad y(0) = 0, \quad y'(0) = 0.$

104. $y'' - 2y + 5y = xe^{2x}, \quad y(0) = 1, \quad y'(0) = 0.$

105. $y'' + 5y' + 6y = 12 \cos 2x, \quad y(0) = 1, \quad y'(0) = 3.$

106. $y'' - 5y' + 6y = (12x - 7)e^{-x}, \quad y(0) = 0, \quad y'(0) = 0.$

107. $y'' - 4y' + 13y = 26x + 5, \quad y(0) = 1, \quad y'(0) = 0.$

108. $y'' - 4y' = 6x^2 + 1, \quad y(0) = 2, \quad y'(0) = 3.$

109. $y'' - 2y' + y = 16e^x, \quad y(0) = 1, \quad y'(0) = 2.$

110. $y'' + 6y' + 9y = 10e^{-2x}, \quad y(0) = 3, \quad y'(0) = 2.$

111. $y'' + y' - 2y = 2x - 1, \quad y(0) = 1, \quad y'(0) = 0.$

Системы линейных дифференциальных уравнений второго порядка.

1.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

2.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

3.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

4.
$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

5.
$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

6.
$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

7.
$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

8.
$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

9.
$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

10.
$$\begin{cases} \dot{x} = -7x + 5y, \\ \dot{y} = 4x - 8y. \end{cases}$$

11.
$$\begin{cases} \dot{x} = 2x + 1y, \\ \dot{y} = -2x + 4y. \end{cases}$$

12.
$$\begin{cases} \dot{x} = -x + y, \\ \dot{y} = -2x + y. \end{cases}$$

13.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

14.
$$\begin{cases} \dot{x} = -6x - 3y, \\ \dot{y} = 8x + 5y. \end{cases}$$

15.
$$\begin{cases} \dot{x} = x - 5y, \\ \dot{y} = -x - 3y. \end{cases}$$

16.
$$\begin{cases} \dot{x} = -3x + 2y, \\ \dot{y} = -2x - 8y. \end{cases}$$

17.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

18.
$$\begin{cases} \dot{x} = 5x + 8y, \\ \dot{y} = 3x + 3y. \end{cases}$$

19.
$$\begin{cases} \dot{x} = x + 5y, \\ \dot{y} = 7x + 3y. \end{cases}$$

20.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

21.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

22.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

23.
$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

24.
$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

25.
$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

26.
$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

27.
$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

28.
$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

29.
$$\begin{cases} \dot{x} = -7x + 5y, \\ \dot{y} = 4x - 8y. \end{cases}$$

30.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

31.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

32.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

33.
$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

34.
$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

35.
$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

36.
$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

37.
$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

38.
$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

39.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

40.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

41.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

42.
$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

43.
$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

44.
$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

45.
$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

46.
$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

47.
$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

48.
$$\begin{cases} \dot{x} = -7x + 5y, \\ \dot{y} = 4x - 8y. \end{cases}$$

49.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

50.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

51.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

52.
$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

53.
$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

54.
$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

55.
$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

56.
$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

57.
$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

58.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

59.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

60.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

61.
$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

62.
$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

63.
$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

64.
$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

65.
$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

66.
$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

67.
$$\begin{cases} \dot{x} = -7x + 5y, \\ \dot{y} = 4x - 8y. \end{cases}$$

68.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

69.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

70.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

71.
$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

72.
$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

73.
$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

74.
$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

75.
$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

76.
$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

77.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

78.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

79.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

80.
$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

81.
$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

82.
$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

83.
$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

84.
$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

85.
$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

86.
$$\begin{cases} \dot{x} = -7x + 5y, \\ \dot{y} = 4x - 8y. \end{cases}$$

87.
$$\begin{cases} \dot{x} = 4x + 6y, \\ \dot{y} = 4x + 2y. \end{cases}$$

88.
$$\begin{cases} \dot{x} = -5x - 4y, \\ \dot{y} = -2x - 3y. \end{cases}$$

89.
$$\begin{cases} \dot{x} = 3x + y, \\ \dot{y} = 8x + y. \end{cases}$$

90.

$$\begin{cases} \dot{x} = 6x + 3y, \\ \dot{y} = -8x - 5y. \end{cases}$$

91.

$$\begin{cases} \dot{x} = -x + 5y, \\ \dot{y} = x + 3y. \end{cases}$$

92.

$$\begin{cases} \dot{x} = 3x - 2y, \\ \dot{y} = 2x + 8y. \end{cases}$$

93.

$$\begin{cases} \dot{x} = -4x - 6y, \\ \dot{y} = -4x - 2y. \end{cases}$$

94.

$$\begin{cases} \dot{x} = -5x - 8y, \\ \dot{y} = -3x - 3y. \end{cases}$$

95.

$$\begin{cases} \dot{x} = -x - 5y, \\ \dot{y} = -7x - 3y. \end{cases}$$

96.

$$\begin{cases} \dot{x} = 3x - 2y + t + 1, \\ \dot{y} = 2x - 2y + 2t. \end{cases}$$
