

Провести полное исследование свойств функции с помощью производных и построить график. (для групп 1-С1,2, 1Л-1, 1ТС-1)

1	$y = \frac{x^5}{x^4 - 1}$	14	$y = \frac{5x^4 + 3}{x}$	27	$y = \frac{x^3}{x^4 - 1}$
2	$y = \frac{2x - 1}{(x - 1)^2}$	15	$y = \frac{x^2 - 2x + 2}{x - 1}$	28	$y = \frac{x^2 - x - 1}{x^2 - 2x}$
3	$y = \frac{4 - 2x}{1 - x^2}$	16	$y = \frac{x^2 + 6}{x^2 + 1}$	29	$y = x \ln x$
4	$y = \frac{\ln x}{\sqrt{x}}$	17	$y = (x - 1)e^{3x - 1}$	30	$y = \frac{x^2 + 1}{x^2}$
5	$y = \frac{x}{9 - x}$	18	$y = x^2 - 2 \ln x$	31	$y = \frac{5x}{4 - x^2}$
6	$y = \frac{x^2 - 3x + 2}{x + 1}$	19	$y = \frac{x^2}{4x^2 - 1}$	32	$y = \ln(x^2 + 1)$
7	$y = \frac{x^3 + 4}{x^2}$	20	$y = \frac{x^3}{x^2 - x + 1}$	33	$y = \frac{(x - 2)^2}{x + 1}$
8	$y = x^2 \cdot e^x$	21	$y = x + \ln \frac{1}{x}$	34	$y = x^3 \cdot e^x$
9	$y = \frac{e^x}{x}$	22	$y = x \cdot e^{2x - 4}$	35	$y = x^4 - 4 \ln x$
10	$y = e^x - x$	23	$y = \frac{5x^4 + 3}{x}$	36	$y = x^3 \cdot \ln x$
11	$y = \frac{\ln x}{x}$	24	$y = e^{2x} - 2e^x$	37	$y = \frac{1}{1 - e^x}$
12	$y = x \cdot \ln x$	25	$y = x + \ln x$	38	$y = x + e^x$
13	$y = x \cdot e^{-3x}$	26	$y = (x - 1) \cdot e^{3x}$		

Провести полное исследование свойств функции с помощью производных и построить график. (для групп 1-С3)

1	$y = (x^3 - 1)(x + 2)$	14	$y = (x^2 + 4)(x - 2)$	27	$y = (x^2 - 1)(x^2 + 1)$
2	$y = (x - 3)(x^2 - 8)$	15	$y = x(x^2 - 4)$	28	$y = (x - 2)(x^2 + 5)$
3	$y = x(x^2 + 4)$	16	$y = 3x^3 + x^2$	29	$y = x - 9x^3$
4	$y = x^2 - 3x^3$	17	$y = x + 3x^3$	30	$y = 3x + x^3 + 2$
5	$y = x^2 - 6x^3 + 5$	18	$y = x^3 + x - 2$	31	$y = x^2 - x^4 + 4$
6	$y = x^5 + 5x$	19	$y = -2x^4 - 9x^2 + 7$	32	$y = 3x^3 + 5x^5$
7	$y = x^4 + 2x^2 - 3$	20	$y = -x^5 + x$	33	$y = 3x^4 - 4x^3 + 15$
8	$y = 5x^5 + 1$	21	$y = 5x^5 - 1$	34	$y = -3x^4 + 4x^3 - 15$
9	$y = -x^5 - x$	22	$y = x^4 - 2x^2 - 3$	35	$y = 5x^3 - 3x^5$
10	$y = 2x^4 - 9x^2 + 7$	23	$y = x^5 - 5x$	36	$y = 5x^2 - x^4 - 4$
11	$y = -3x + x^3 + 2$	24	$y = 6x^2 - x^3 - 5$	37	$y = 3x - x^3 - 2$
12	$y = -3x^2 + x^3 + 2$	25	$y = 3x - x^3$	38	$y = x^2 + 3x^3$
13	$y = -9x + x^3$	26	$y = 3x^2 - x^3$		