

$$1.31. \sum_{k=1}^{\infty} \frac{9}{9k^2 + 3k - 20}.$$

$$2.31. \text{ а) } \sum_{k=1}^{\infty} \frac{8^k}{3^k (k+2)!}, \text{ б) } \sum_{k=1}^{\infty} \left( \frac{2k+1}{3k-1} \right)^{2k}, \text{ в) } \sum_{k=2}^{\infty} \frac{1}{(2k+1) \ln(2k+1)}.$$

$$3.31. \sum_{k=1}^{\infty} \frac{(-1)^{k+1} 2^k}{k^2 + 1}, \alpha = 0,01.$$

$$4.31. \sum_{k=1}^{\infty} \frac{(-1)^{k+1}}{(2k-1)!} (x+3)^k.$$

$$5.30 \sum_{k=1}^{\infty} \frac{3^k (x-5)^k}{(3k+8)2^k}.$$

$$5.31. \sum_{k=1}^{\infty} \frac{(-1)^{k+1}}{(2k-1)!} (x+3)^k.$$

$$1.31. f(x) = -9x + 1.$$

$$2.31 f(x) = -2x + 6.$$

$$3.31. f(x) = 6x + 7.$$

$$4.31 f(x) = 5|x| + 7.$$

$$5.31 f(x) = \begin{cases} 2x + 4 & \text{при } -\pi \leq x \leq 0, \\ 5 & \text{при } 0 < x \leq \pi. \end{cases}$$