
Ответы, день 2

1.
 - 1) $f(x) = x + \sum_{k=1}^{n-1} \left(\frac{C_{-1/2}^k}{2k+1} - \frac{C_{-1/2}^{k-1}}{2k-1} \right) x^{2k+1} + o(x^{2n});$
 - 2) $f(x) = \frac{3}{7}(x-1)^2 + \sum_{k=2}^n \frac{(-1)^k}{7} \left(\frac{1}{k-1} - \frac{3}{k} \right) (x-1)^{2k} + o[(x-1)^{2n+1}];$
 - 3) $f(x) = 1 + \sum_{k=1}^n \left(\frac{(-4)^k}{(2k)!} + \frac{(-4)^{k-1}}{(2k-2)!} \right) \left(x + \frac{1}{2} \right)^{2k} + o[(x + \frac{1}{2})^{2n+1}].$
2.
 - 1) $\frac{5}{6};$
 - 2) $\frac{14}{3};$
 - 3) $-\frac{5}{8}.$
3.
 - 1) $e^{-5/3};$
 - 2) $e^{7/32};$
 - 3) $e^{-1}.$