Нахождение производной по-пацански.

Автору: 0 лет

17 декабря 2019 г.

Стоите такие с пацанами

$$f(x) = (sin(x))^{228}$$

$$g(x) = (sin(x))^{228}$$

$$h(x) = (sin(x))^{228}$$

$$p(x) = (sin(x))^{228}$$

У вас с пацанами давно сформировались четкие правила:

$$x \in \mathbb{R}$$

И Стасян такой хоба:

$$f(x) = (sin(x))^{228}$$

А потом такой хоба

$$f^{(1)}(x) = cos(x) \cdot (sin(x))^{227} \cdot 228$$

А потом такой хоба

$$f^{(2)}(x) = sin(x) \cdot (sin(x))^{227} \cdot (-228) + (cos(x))^2 \cdot (sin(x))^{226} \cdot 51756$$

А потом такой хоба

$$f^{(3)}(x) = sin(x) \cdot (sin(x))^{226} \cdot cos(x) \cdot (-103512) + (cos(x))^2 \cdot (sin(x))^{225} \cdot cos(x) \cdot 11696856 + cos(x) \cdot (sin(x))^{227} \cdot (-228) + sin(x) \cdot (sin(x))^{226} \cdot cos(x) \cdot (-51756)$$

А потом такой хоба

$$f^{(4)}(x) = (cos(x))^2 \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot 2631792600,00 + sin(x) \cdot (cos(x))^2 \cdot (sin(x))^{225} \cdot (-23393712) + sin(x) \cdot (sin(x))^{227} \cdot 228 + (sin(x))^{226} \cdot (cos(x))^2 \cdot (-103512) + (sin(x))^{226} \cdot (cos(x))^2 \cdot (-103512) + (sin(x))^{225} \cdot sin(x) \cdot (cos(x))^2 \cdot (-46787424) + (sin(x))^2 \cdot (sin(x))^{226} \cdot 103512 + (sin(x))^2 \cdot (sin(x))^{226} \cdot 51756$$

А потом такой хоба

$$f^{(5)}(x) = (sin(x))^2 \cdot cos(x) \cdot (sin(x))^{225} \cdot 46787424 + cos(x) \cdot (sin(x))^{227} \cdot 228 + sin(x) \cdot (sin(x))^{226} \cdot cos(x) \cdot 51756 + cos(x) \cdot (sin(x))^{226} \cdot sin(x) \cdot 621072 + (sin(x))^{224} \cdot cos(x) \cdot sin(x) \cdot (cos(x))^2 \cdot (-10527170400,00) + (sin(x))^{225} \cdot cos(x) \cdot (cos(x))^2 \cdot (-46787424) + (sin(x))^{225} \cdot cos(x) \cdot (sin(x))^2 \cdot 93574848 + (sin(x))^2 \cdot (sin(x))^{225} \cdot cos(x) \cdot 23393712 + cos(x) \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot sin(x) \cdot (-15790755600,00) + ((cos(x))^2)^2 \cdot (sin(x))^{223} \cdot cos(x) \cdot 589521542400,00 + sin(x) \cdot (sin(x))^{226} \cdot cos(x) \cdot 103512 + (sin(x))^2 \cdot (sin(x))^{225} \cdot cos(x) \cdot 11696856 + cos(x) \cdot (cos(x))^2 \cdot (sin(x))^{225} \cdot (-70181136)$$

А потом такой хоба

$$f^{(6)}(x) = (cos(x))^2 \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot (-21054340800,00) + (sin(x))^2 \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot 42108681600,00 + (cos(x))^2 \cdot (sin(x))^{225} \cdot sin(x) \cdot 93574848 + (sin(x))^{225} \cdot sin(x) \cdot (sin(x))^2 \cdot (-93574848) + (sin(x))^{225} \cdot (cos(x))^2 \cdot sin(x) \cdot 187149696 + (sin(x))^2 \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot 5263585200,00 + (sin(x))^2 \cdot (sin(x))^{225} \cdot sin(x) \cdot (-23393712) + (sin(x))^2 \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot 15790755600,00 + (cos(x))^2 \cdot (sin(x))^{223} \cdot (cos(x))^2 \cdot sin(x) \cdot (-3537129254400,00) + (cos(x))^2 \cdot (sin(x))^2 \cdot (sin(x))^{224} \cdot 31581511200,00 + (cos(x))^2 \cdot (cos(x))^2 \cdot (sin(x))^{224} \cdot (-31581511200,00) + ((cos(x))^2)^2 \cdot (sin(x))^{222} \cdot (cos(x))^2 \cdot 131463303955200,00 + ((cos(x))^2)^2 \cdot (sin(x))^{223} \cdot sin(x) \cdot (-589521542400,00) + sin(x) \cdot (cos(x))^2 \cdot (sin(x))^{225} \cdot 187149696 + (sin(x))^2 \cdot sin(x) \cdot (sin(x))^{225} \cdot (-46787424) + (sin(x))^{224} \cdot (sin(x))^2 \cdot (cos(x))^2 \cdot 21054340800,00 + (sin(x))^{226} \cdot (cos(x))^2 \cdot 103512 + sin(x) \cdot (sin(x))^{227} \cdot (-228) + (sin(x))^{226} \cdot (cos(x))^2 \cdot 103512 + (sin(x))^{225} \cdot sin(x) \cdot (cos(x))^2 \cdot 46787424 + (sin(x))^2 \cdot (sin(x))^{226} \cdot (-103512) + sin(x) \cdot (sin(x))^{225} \cdot (cos(x))^2 \cdot 11696856 + (sin(x))^2 \cdot (sin(x))^{226} \cdot (-51756) + (sin(x))^2 \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot 2631792600,00 + (sin(x))^2 \cdot (sin(x))^{226} \cdot (-621072) + (sin(x))^{225} \cdot (cos(x))^2 \cdot sin(x) \cdot 280724544 + (cos(x))^2 \cdot (sin(x))^{226} \cdot 621072 + (sin(x))^2 \cdot (sin(x))^{225} \cdot sin(x) \cdot (-11696856) + (sin(x))^{223} \cdot (cos(x))^2 \cdot sin(x) \cdot (cos(x))^2 \cdot (-4716172339200,00) + sin(x) \cdot (cos(x))^2 \cdot (sin(x))^{225} \cdot 70181136$$

А потом такой хоба

$$f^{(7)}(x) = cos(x) \cdot (sin(x))^2 \cdot sin(x) \cdot (sin(x))^{224} \cdot (-10527170400,00) + cos(x) \cdot (sin(x))^2 \cdot (sin(x))^{225} \cdot (-93574848) + sin(x) \cdot cos(x) \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot 31581511200,00 + (sin(x))^2 \cdot (sin(x))^{223} \cdot cos(x) \cdot (cos(x))^2 \cdot 3537129254400,00 +$$

$$(sin(x))^2 \cdot sin(x) \cdot (sin(x))^{224} \cdot cos(x) \cdot (-31581511200,00) + cos(x) \cdot$$
$$(sin(x))^{223} \cdot (cos(x))^2 \cdot (sin(x))^2 \cdot 21222775526400,00 + ((cos(x))^2)^2 \cdot$$
$$(sin(x))^{222} \cdot cos(x) \cdot sin(x) \cdot (-788779823731200,00) + ((cos(x))^2)^2 \cdot$$
$$(sin(x))^{223} \cdot cos(x) \cdot (-3537129254400,00) + sin(x) \cdot (sin(x))^2 \cdot (sin(x))^{224} \cdot$$
$$cos(x) \cdot (-63163022400,00) + cos(x) \cdot (cos(x))^2 \cdot (sin(x))^{224} \cdot sin(x) \cdot$$
$$252652089600,00 + ((cos(x))^2)^2 \cdot (sin(x))^{223} \cdot cos(x) \cdot (-7074258508800,00) +$$
$$sin(x) \cdot (sin(x))^{222} \cdot ((cos(x))^2)^2 \cdot cos(x) \cdot (-525853215820800,00) +$$
$$((cos(x))^2)^2 \cdot (sin(x))^{221} \cdot (cos(x))^2 \cdot cos(x) \cdot 29184853478054400,00 +$$
$$((cos(x))^2)^2 \cdot (sin(x))^{222} \cdot sin(x) \cdot cos(x) \cdot (-262926607910400,00) +$$
$$(cos(x))^2 \cdot (sin(x))^{223} \cdot (sin(x))^2 \cdot cos(x) \cdot 2358086169600,00 + ((cos(x))^2)^2 \cdot$$
$$(sin(x))^{222} \cdot sin(x) \cdot cos(x) \cdot (-131463303955200,00) + ((cos(x))^2)^2 \cdot$$
$$(sin(x))^{223} \cdot cos(x) \cdot (-589521542400,00) + (sin(x))^{223} \cdot cos(x) \cdot (sin(x))^2 \cdot$$
$$(cos(x))^2 \cdot 4716172339200,00 + (sin(x))^{224} \cdot sin(x) \cdot (sin(x))^2 \cdot cos(x) \cdot$$
$$(-42108681600,00) + cos(x) \cdot (cos(x))^2 \cdot (sin(x))^{225} \cdot 46787424 + cos(x) \cdot$$
$$(sin(x))^{226} \cdot sin(x) \cdot (-621072) + cos(x) \cdot (sin(x))^{227} \cdot (-228) + sin(x) \cdot$$
$$(sin(x))^{226} \cdot cos(x) \cdot (-51756) + (sin(x))^{225} \cdot cos(x) \cdot (cos(x))^2 \cdot 46787424 +$$
$$cos(x) \cdot (sin(x))^{225} \cdot (cos(x))^2 \cdot 11696856 + sin(x) \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot$$
$$cos(x) \cdot 2631792600,00 + sin(x) \cdot (sin(x))^{226} \cdot cos(x) \cdot (-103512) + cos(x) \cdot$$
$$(sin(x))^2 \cdot (sin(x))^{225} \cdot (-23393712) + sin(x) \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot cos(x) \cdot$$
$$5263585200,00 + (sin(x))^2 \cdot (sin(x))^{223} \cdot (cos(x))^2 \cdot cos(x) \cdot$$
$$589521542400,00 + cos(x) \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot sin(x) \cdot 210543408000,00 +$$
$$cos(x) \cdot ((cos(x))^2)^2 \cdot (sin(x))^{223} \cdot (-9432344678400,00) + cos(x) \cdot (sin(x))^{226} \cdot$$
$$sin(x) \cdot (-2484288) + cos(x) \cdot (sin(x))^2 \cdot (sin(x))^{225} \cdot (-280724544) +$$
$$sin(x) \cdot cos(x) \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot 84217363200,00 + cos(x) \cdot (sin(x))^2 \cdot$$
$$(cos(x))^2 \cdot (sin(x))^{223} \cdot 28297034035200,00 + (sin(x))^2 \cdot sin(x) \cdot (sin(x))^{224} \cdot$$
$$cos(x) \cdot (-84217363200,00) + (sin(x))^{225} \cdot cos(x) \cdot (sin(x))^2 \cdot (-561449088) +$$
$$cos(x) \cdot (sin(x))^{225} \cdot (sin(x))^2 \cdot (-374299392) + (cos(x))^2 \cdot (sin(x))^{224} \cdot$$
$$cos(x) \cdot sin(x) \cdot 21054340800,00 + (cos(x))^2 \cdot cos(x) \cdot (sin(x))^{225} \cdot 93574848 +$$
$$(sin(x))^{225} \cdot cos(x) \cdot (cos(x))^2 \cdot 280724544 + (sin(x))^{224} \cdot sin(x) \cdot (sin(x))^2 \cdot$$
$$cos(x) \cdot (-21054340800,00) + cos(x) \cdot (sin(x))^{225} \cdot (sin(x))^2 \cdot (-280724544) +$$
$$(cos(x))^2 \cdot (sin(x))^{225} \cdot cos(x) \cdot 140362272 + (sin(x))^2 \cdot (sin(x))^{224} \cdot sin(x) \cdot$$
$$cos(x) \cdot (-2631792600,00) + (sin(x))^{222} \cdot cos(x) \cdot ((cos(x))^2)^2 \cdot sin(x) \cdot$$
$$(-1051706431641600,00) + cos(x) \cdot (sin(x))^{225} \cdot (sin(x))^2 \cdot (-748598784) +$$
$$cos(x) \cdot (sin(x))^{225} \cdot (cos(x))^2 \cdot 374299392 + cos(x) \cdot (cos(x))^2 \cdot (sin(x))^{225} \cdot$$
$$70181136 + cos(x) \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot sin(x) \cdot 21054340800,00 + (sin(x))^2 \cdot$$
$$(sin(x))^{223} \cdot (cos(x))^2 \cdot cos(x) \cdot 1179043084800,00 + cos(x) \cdot (sin(x))^2 \cdot$$
$$(sin(x))^{224} \cdot sin(x) \cdot (-21054340800,00) + sin(x) \cdot (sin(x))^{224} \cdot (cos(x))^2 \cdot$$
$$cos(x) \cdot 15790755600,00 + cos(x) \cdot (sin(x))^{225} \cdot (sin(x))^2 \cdot (-93574848)$$

А потом подставляет свой x = 1,00

$$f^{(7)}(1,00) = 0,008319$$

А потом Стасян берет и раскладывается по Маклорену:

$$f(x) = +o(x^5), x \longrightarrow 0.$$

Ну ты стасян и дебил конечно...