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(* ДЗ  Потенциальное поле *)
(* в плоскости задано поле F=(P(x,y),Q(x,y))*)
(* три коэффицента многочлена  P(x,y)   A,B,C *)
(* надо определить так, чтобы поле стало потнециальным *)
(* решить дифференциальное уравнение, то есть восстановить потенциал U(x,y)*)
(* уравнение U(x,y)=U(1,1) определяет неявную функцию  y=f(x) *)
(* которая решает задачу Коши с начальным условием 1=f(1)*)
(* проведите кастельную к решению в точке x0=1,y0=1    *)
(* по касательной определите y1 -- приближенное значение решения*)
(* в точке x1=1+1/10 *)
(* продолжите построение ломаной Эйлера , рассмотрите x2=1+2/10, x3=1+3/10 *)
(* предложите способ оценивать качество приближения *)
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{= = = = = = = = =}

{vr, 1}

$$P(x,y)=9\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{2\,x^3}{3}+8\,x^2\,y+15\,x\,y^2+7\,y^3$$

{= = = = = = = = =}

{vr, 2}

$$P(x,y)=8\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+8\,x^2\,y+9\,x\,y^2+3\,y^3$$

{= = = = = = = = =}

{vr, 3}

$$P(x,y)=7\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{8\,x^3}{3}+9\,x^2\,y+18\,x\,y^2+9\,y^3$$

{= = = = = = = = =}

{vr, 4}

$$P(x,y)=7\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{8\,x^3}{3}+7\,x^2\,y+12\,x\,y^2+3\,y^3$$

{= = = = = = = = =}

{vr, 5}

$$P(x,y)=7\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{8\,x^3}{3}+5\,x^2\,y+18\,x\,y^2+4\,y^3$$

{= = = = = = = = =}

{vr, 6}

$$P(x,y)=2\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=2\,x^3+3\,x^2\,y+12\,x\,y^2+7\,y^3$$

{= = = = = = = = =}

{vr, 7}

$$P(x,y)=3\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{5\,x^3}{3}+8\,x^2\,y+18\,x\,y^2+7\,y^3$$

{= = = = = = = = =}

{vr, 8}

$$P(x,y)=5\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{2\,x^3}{3}+5\,x^2\,y+21\,x\,y^2+2\,y^3$$

{= = = = = = = = =}

{vr, 9}

$$P(x,y)=9\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{7\,x^3}{3}+9\,x^2\,y+15\,x\,y^2+3\,y^3$$

{= = = = = = = = =}

{vr, 10}

$$P(x,y)=9\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{2\,x^3}{3}+7\,x^2\,y+24\,x\,y^2+8\,y^3$$

{= = = = = = = = =}

{vr, 11}

$$P(x,y)=9\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{7\,x^3}{3}+8\,x^2\,y+15\,x\,y^2+6\,y^3$$

{= = = = = = = = =}

{vr, 12}

$$P(x,y)=4\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{2\,x^3}{3}+5\,x^2\,y+27\,x\,y^2+5\,y^3$$

{= = = = = = = = =}

{vr, 13}

$$P(x,y)=3\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=2\,x^3+4\,x^2\,y+9\,x\,y^2+4\,y^3$$

{= = = = = = = = =}

{vr, 14}

$$P(x,y)=6\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{8\,x^3}{3}+5\,x^2\,y+9\,x\,y^2+2\,y^3$$

{= = = = = = = = =}

{vr, 15}

$$P(x,y)=9\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+2\,x^2\,y+9\,x\,y^2+6\,y^3$$

{= = = = = = = = =}

{vr, 16}

$$P(x,y)=8\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{8\,x^3}{3}+5\,x^2\,y+27\,x\,y^2+4\,y^3$$

{= = = = = = = = =}

{vr, 17}

$$P(x,y)=4\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+6\,x^2\,y+15\,x\,y^2+2\,y^3$$

{= = = = = = = = =}

{vr, 18}

$$P(x,y)=7\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+6\,x^2\,y+24\,x\,y^2+5\,y^3$$

{= = = = = = = = =}

{vr, 19}

$$P(x,y)=9\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+7\,x^2\,y+15\,x\,y^2+7\,y^3$$

{= = = = = = = = =}

{vr, 20}

$$P(x,y)=2\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{8\,x^3}{3}+4\,x^2\,y+21\,x\,y^2+4\,y^3$$

{= = = = = = = = =}

{vr, 21}

$$P(x,y)=9\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{8\,x^3}{3}+4\,x^2\,y+9\,x\,y^2+2\,y^3$$

{= = = = = = = = =}

{vr, 22}

$$P(x,y)=7\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+3\,x^2\,y+12\,x\,y^2+5\,y^3$$

{= = = = = = = = =}

{vr, 23}

$$P(x,y)=4\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+4\,x^2\,y+18\,x\,y^2+6\,y^3$$

{= = = = = = = = =}

{vr, 24}

$$P(x,y)=3\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=2\,x^3+8\,x^2\,y+6\,x\,y^2+8\,y^3$$

{= = = = = = = = =}

{vr, 25}

$$P(x,y)=6\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{5\,x^3}{3}+4\,x^2\,y+24\,x\,y^2+9\,y^3$$

{= = = = = = = = =}

{vr, 26}

$$P(x,y)=9\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=x^3+2\,x^2\,y+21\,x\,y^2+4\,y^3$$

{= = = = = = = = =}

{vr, 27}

$$P(x,y)=2\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+7\,x^2\,y+15\,x\,y^2+5\,y^3$$

{= = = = = = = = =}

{vr, 28}

$$P(x,y)=3\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=\frac{7\,x^3}{3}+2\,x^2\,y+15\,x\,y^2+9\,y^3$$

{= = = = = = = = =}

{vr, 29}

$$P(x,y)=8\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=3\,x^3+6\,x^2\,y+21\,x\,y^2+3\,y^3$$

{= = = = = = = = =}

{vr, 30}

$$P(x,y)=3\,x^3+A\,x^2\,y+B\,x\,y^2+C\,y^3,\quad Q(x,y)=x^3+9\,x^2\,y+15\,x\,y^2+7\,y^3$$

(* P=..+A x^2 y+B x y^2+... (P,Q) & (-Q,P) потенциальны *)