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①

2	7	8	9	10
y	3	1	1	9

$$f(9.5) = \left(\frac{1.5 \times 0.5 \times (-0.5)}{-1 \times -2 \times -3} \right) \times 3$$

$$+ \left(\frac{2.5 \times 0.5 \times (-0.5)}{1 \times (-1) \times (-2)} \right) \times 1$$

$$+ \left(\frac{2.5 \times 1.5 \times (-0.5)}{2 \times 1 \times (-1)} \right) \times 1$$

$$+ \left(\frac{2.5 \times 1.5 \times 0.5}{3 \times 2 \times 1} \right) \times 9$$

$$\Rightarrow f(9.5) = \frac{29}{8} = 3.625$$

②

x	3	7	9	10
y	168	20	72	63

$$f(6) = \left(\frac{-1 \times (-3) \times (-4)}{-4 \times (-5) \times (-6)} \times 168 \right)$$

$$+ \left(\frac{3 \times (-3) \times (-4)}{4 \times (-2) \times (-3)} \times 20 \right)$$

$$+ \left(\frac{3 \times (-1) \times (-4)}{6 \times 2 \times (-1)} \times 72 \right)$$

$$+ \left(\frac{3 \times (-1) \times (-3)}{7 \times 3 \times 1} \times 63 \right)$$

$$f(6) = 151.8$$

(3)

x	1	2	7	8
y	4	5	5	4

$$f(6) = \left[\frac{4 \times (-1) \times (-2)}{-1 \times -6 \times -7} \times 4 \right] + \left[\frac{5 \times (-1) \times (-2)}{6 \times 5 \times (-1)} \times 5 \right] + \left[\frac{5 \times 4 \times (-2)}{6 \times 5 \times (-1)} \times 5 \right] + \left[\frac{5 \times 4 \times -1}{7 \times 6 \times 1} \times 4 \right]$$

$$f(6) = \frac{17}{3} = 5.6667$$

(4)

z	1	2	3	4	7
y	2	4	8	16	128

$$f(5) = \left[\frac{3 \times 2 \times 1 \times (-2)}{(-1) \times (-2) \times (-3) \times 6} \times 2 \right] + \left[\frac{4 \times 2 \times 1 \times (-2)}{1 \times -1 \times -2 \times -5} \times 4 \right] + \left[\frac{4 \times 3 \times 1 \times (-2)}{2 \times 1 \times (-1) \times (-4)} \times 8 \right] + \left[\frac{4 \times 3 \times 2 \times -2}{3 \times 2 \times 1 \times (-3)} \times 16 \right] + \left[\frac{4 \times 3 \times 2 \times 1}{6 \times 5 \times 4 \times 3} \times 128 \right]$$

$$\therefore f(5) = 32$$

(5)

x	10	14	16	20
y	0.25	0.15	0.10	0.2

$$\begin{aligned} f(15) = & \left(\frac{1 \times (-1) \times (-5)}{-4 \times (-6) \times (10)} \times 0.25 \right) \\ & + \left(\frac{5 \times (-1) \times (-5)}{4 \times (-2) \times (-6)} \times 0.15 \right) \\ & + \left(\frac{5 \times 1 \times (-5)}{6 \times 2 \times (-4)} \times 0.10 \right) \\ & + \left(\frac{5 \times 1 \times (-1)}{10 \times 6 \times 4} \times 0.2 \right) \end{aligned}$$

$$f(15) = \frac{29}{240} = 0.120833$$