

Soluție

1. a) $C_3^0 + C_3^1 + C_3^2 = 1 + 3 + 3 = 7$
b) $2^3 < 10; 2^5 > 10, 2^6 > 10; P = \frac{2}{3}$
2. $2^{-2} \cdot 2^{-1} \cdot 2^0 \cdot \dots \cdot 2^n = 2^{-2-1+0+1+2+3+\dots+n} = 128 = 2^7; n = 3 + 4 = 7$
3. $C_5^0 + C_5^1 + C_5^2 + C_5^3 + C_5^4 + C_5^5 = 2^5 = 32$
4. a) $f(1) = \frac{1}{2}; f(2) = 0, f(3) = -\frac{1}{6}; -\frac{1}{6} < 0 < \frac{1}{2}; \Rightarrow f(3) < f(2) < f(1)$
b) $-\frac{1}{6} \leq \frac{1}{x} - \frac{1}{2} \leq \frac{1}{2}; \text{Im } f = \left[-\frac{1}{6}, \frac{1}{2} \right]$