

Soluție

1. a) $n = 2^4 \cdot 5^3 = 2000 \Rightarrow a = 4; b = 3$
b) $1 = 2^0 \cdot 5^0; 2 = 2^1 \cdot 5^0; 4 = 2^2 \cdot 5^0; 5 = 2^0 \cdot 5^1; 8 = 2^3 \cdot 5^0; 10 = 2^1 \cdot 5^1; 16 = 2^4 \cdot 5^0; 20 = 2^2 \cdot 5^1 \Rightarrow P = \frac{8}{21}$
2. $a_2 = 1 \Rightarrow a_1 = 1 + 3, 4 = 4, 4; a_7 = 4, 4 + 6 \cdot (-3, 4) = -16$
3. $C_7^4 = C_7^3 = 35, C_{11}^{10} = 11; \frac{C_7^4 + C_7^3}{C_{11}^{10}} = \frac{35 + 35}{11} = \frac{70}{11}.$
4. a) $f(-4) = 0, f(0) = 2; f(-4) + f(0) = 0 + 2 = 2$
b) $|x + 3| - 1 \geq 0 - 1 = -1; \text{Im}(f) = [-1; \infty).$