

$$2 \log_{mn}^m + \log_{mn}^n \leq b \quad 14, 15$$

مستقيم نسبي غير عمودي على باقي

(1)

$$\log_n^m + \log_n^n = \log_n^{mn} \leq a+1 \Rightarrow \log_{mn}^n \leq \frac{1}{a-1}$$

(2)

$$\log_m^n + \log_m^m \leq \log_m^{mn} \leq \frac{1}{a-1} \Rightarrow \log_{mn}^m \leq \frac{a}{a-1}$$

$$\frac{2a}{a-1} + \frac{1}{a-1} \leq \frac{2a+1}{a-1} \leq b$$

$$\frac{a+1}{a-1} < \frac{2a+1}{a-1} < \frac{2a+2}{a-1}$$

$$\Rightarrow [b] \leq 1 \quad \checkmark$$

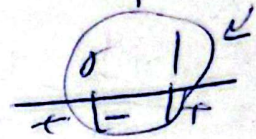
(15) (1)

$$\text{الف) } n \geq 3$$

$$-\frac{n}{\log_2 n} \gg$$

مخرج غير متوازن صفر
شعاع

$$I \cap J \rightarrow \{0, 1\}$$



(-1) (1)

ب)

$$n^{n-1} \geq 0 \quad n \geq 1 \leq n \leq -1$$

$$n^{n-1} - n^{-1} \geq (n-1)(n-1) \geq \frac{-1}{1-1}$$

$$P \leq (0, -1) \cup (1, 2) \quad \checkmark$$

(15)

(2)

$$2 \log_7^a + \log_7^{\sqrt{a}} \leq c \Rightarrow \log_7^a + \log_7^{\sqrt{a}} \leq c \quad \log_7^a = t$$

$$t + \frac{1}{\sqrt{t}} \leq c \Rightarrow t^2 - ct + 1 \leq 0 \Rightarrow (t-1) \Rightarrow \log_7^a = 1 \Rightarrow a \leq 7 \quad \checkmark$$

(15)

$$\log_7^{\frac{a}{p}} + \log_7^q = \log_7^{\frac{a}{p} \cdot q} \leq \log_7^q \Rightarrow$$

$$a \leq b \leq c \Rightarrow$$

(2)

$$n_1 \leq 1$$

$$n_2 \leq \frac{c}{a} \leq \frac{-\log_7^{\frac{a}{p}} + \log_7^q}{\log_7^{\frac{a}{p}} - \log_7^q} = \frac{\sqrt{c} + \sqrt{c}}{\sqrt{c} - \sqrt{c}} = \frac{-11}{\sqrt{c}}$$

$$1 - (-\frac{11}{\sqrt{c}}) \leq \frac{c}{a} \quad \checkmark$$

