

九十三學年度指定科目考試
數學乙考科選擇題參考答案

題號	答案
1	2
2	1
3	4
4	5
5	2,4
6	1,3
A	2
B	161
C	$\frac{1}{9}$
D	$\frac{23}{8}$
E	(0.5, 1, - 1)

非選擇題

貳、計算證明題解答

一、

$$(1) P = 5000x + 100y$$

$$(2) x = 30, y = 800$$

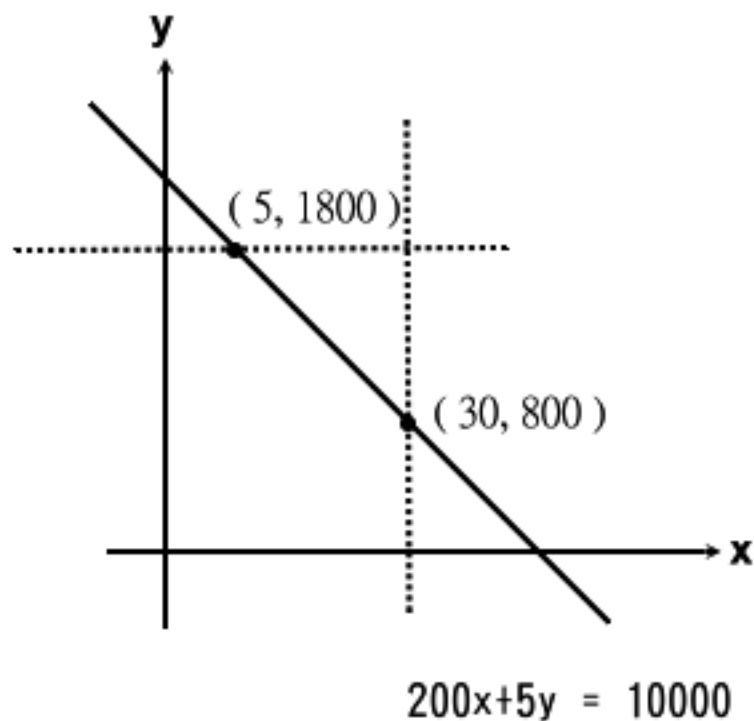
$$\therefore 0 \leq x \leq 30; 0 \leq y \leq 1800$$

圖形如右

\therefore 極值產生在端點處

\rightarrow 將 $(30, 800)$ 代入

得 $P = 230000$ 為最大



二、

(1) 0 分貝

$$I = 10^{-12}$$

$$d(I) = 10 \times \log_{10} \frac{10^{-12}}{10^{-12}} = 10 \times \log 1 = 0 \text{ (分貝)}$$

(2) 80 分貝

$$I = 10^{-4}$$

$$d(I) = 10 \times \log_{10} \frac{10^{-4}}{10^{-12}} = 10 \times \log 10^8 = 80 \text{ (分貝)}$$

(3) 90 分貝

$$d(I) = 70 = 10 \times \log \frac{I}{I_0} \rightarrow \log \frac{I}{I_0} = 7 \quad I = I_0 \times 10^7$$

$$d(100I) = 10 \times \log \frac{100I}{I_0} = 10 \times \log \frac{100 \times I_0 \times 10^7}{I_0} = 10 \times \log 10^9 = 90 \text{ (分貝)}$$