4. $P_X = 80,\ P_Y = 200,\ M = 1400$

(a) $60X + 100Y = 6200$

(b)
$$\begin{cases} 80(X-5) + 100Y = 6200, & X > 5 \\ 100Y = 6200, & X \le 5 \end{cases}$$

(c)
$$\begin{cases} 80X + 100Y = 6400, & X \le 50 \\ 100Y = 2400, & 50 < X \le 55 \\ 80X + 100Y = 6800, & X > 55 \end{cases}$$

2. $P_X = P_Y = 10$, 預算 $= 500$

(A) $10X + 10Y = 500$

(B) $\frac{10}{-10} = -1$

(C) $11X + 10Y = 500$

(D) $8X + 10Y = 500$

(E) $10X + 10Y = 400$

(F) $\begin{cases} 10(X-10) + 10Y = 500, & X \geq 10 \\ 10Y = 500, & X < 10 \end{cases}$

(G) $\begin{cases} 10X + 10Y = 500, & X \leq 30 \\ 10 \times 30 + 12(X-30) + 10Y = 500, & X > 30 \end{cases}$

(H) $\begin{cases} 10X + 10Y = 500, & X \leq 30 \\ 10 \times 30 + 5(X-30) + 10Y = 500, & X > 30 \end{cases}$