

$$\textcircled{1} \frac{P_x}{P_y} = \frac{2xy}{x^2} = \frac{10}{20} \Rightarrow x = 4y$$

$$\textcircled{2} y = \frac{1}{4}x$$

$$\text{代入限制式} \Rightarrow x = \frac{11}{15}$$

$$\textcircled{3} \frac{2y}{x} = \frac{p_x}{20} \Rightarrow y = \frac{p_x}{40}x$$

$$\text{代入限制式} \Rightarrow 300 = p_x x + 20 \left[\frac{p_x}{40} x \right] \Rightarrow x = \frac{200}{p_x}$$

④ 由所得消費曲線 & 恩格爾曲線可知 x 財貨為正常財
由需求線可知 x 財貨符合需求法則