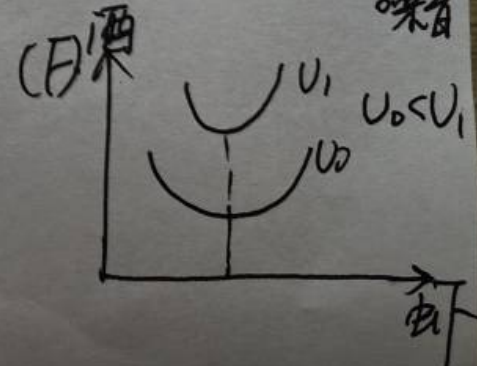
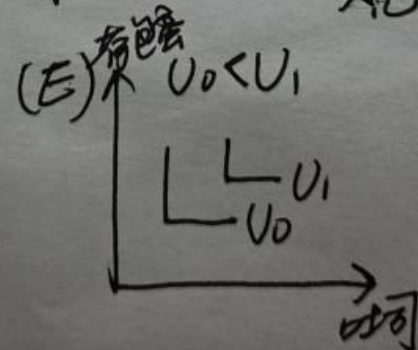
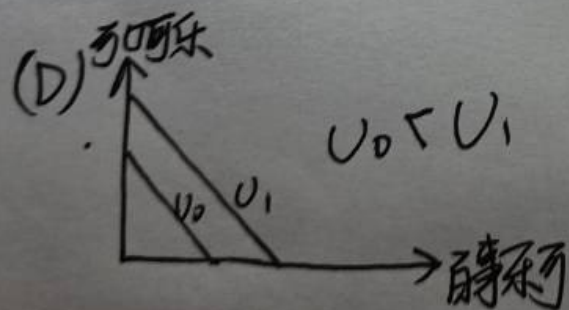
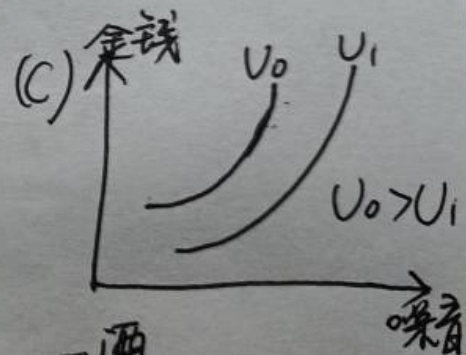
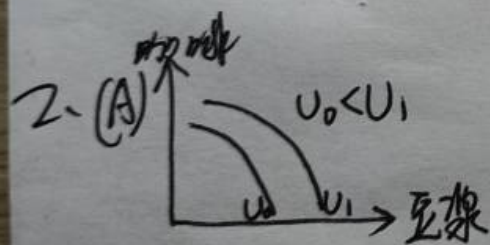


1. $0.5X^{-0.5}Y^2$	$2X$	$\frac{1}{X}$	2	Y^4
$2X^{0.5}Y$	$2Y$	1	1	$4XY^3$
递减	递增	递减	不变	不变
递增	递增	不变	不变	递增
$\frac{0.25Y}{X}$	$\frac{X}{Y}$	$\frac{1}{X}$	2	$\frac{0.25Y}{X}$
递减	递增	递减	不变	递减
凸向原点	凹向原点	凸向原点	直线	凸向原点



3.

$$(A) 500 = 10x + 10y$$

$$\Rightarrow x + y = 50$$

$$(B) \text{斜率爲}-1$$

$$(C) 10(1+t)x + 10y = 500$$

$$\Rightarrow y = 50 - (1+t)x$$

$$(D) 4x + 5y = 250$$

$$(E) x + y = 40$$

$$(F) ~~500~~ 500 = 10(x+10) + 10y$$

$$\Rightarrow y = 40 - x$$

$$(G) 10y + 30x/10 - (x-30) \times 2 = 500$$

$$\Rightarrow -x + 5y = 70$$

$$(H) 10y + 300 + (x-30) \times 5 = 500$$

$$\Rightarrow x + 2y = 70$$

$$4 \quad \underline{200y + 80x = 6400}$$

$$\text{方案一: } 3x + 10y = 310$$

$$\text{方案二: } 200y + 80(x-5) = 6200$$

$$\Rightarrow 2x + 5y = 165$$

$$\text{方案三: } \begin{cases} 200y + 80(x-5) = 6400 \\ \Rightarrow 2x + 5y = 170 \quad (x > 50) \end{cases}$$

$$\Rightarrow 2x + 5y = 170 \quad (x > 50)$$

$$200y + 80x = 6400 \quad (x < 50)$$

6.

① ~~$12000 = 400X + 600Y$~~

$$\Rightarrow 12000 = 400X + 600Y$$

当 $X=Y$ 时 最优

$$\therefore X=Y=12$$

② 最优进修时数改变。

$$MRS_{XY} = \frac{\frac{1}{2}X^{-\frac{1}{2}}Y^{-\frac{1}{2}}}{\frac{1}{2}X^{\frac{1}{2}}Y^{-\frac{1}{2}}} = \frac{P_X}{P_Y} = \frac{2}{3}$$

$$\Rightarrow \begin{cases} X=15 \\ Y=10 \end{cases}$$