$$\frac{\frac{\partial u}{\partial x_1}}{\frac{\partial u}{\partial x_2}} = \frac{p_1}{p_2}$$

$$\Leftrightarrow \frac{\frac{1}{2} \cdot x_1^{-\frac{1}{2}} \cdot x_2^{\frac{1}{2}}}{\frac{1}{2} \cdot x_1^{\frac{1}{2}} \cdot x_2^{-\frac{1}{2}}} = \frac{4}{8} = \frac{1}{2}$$

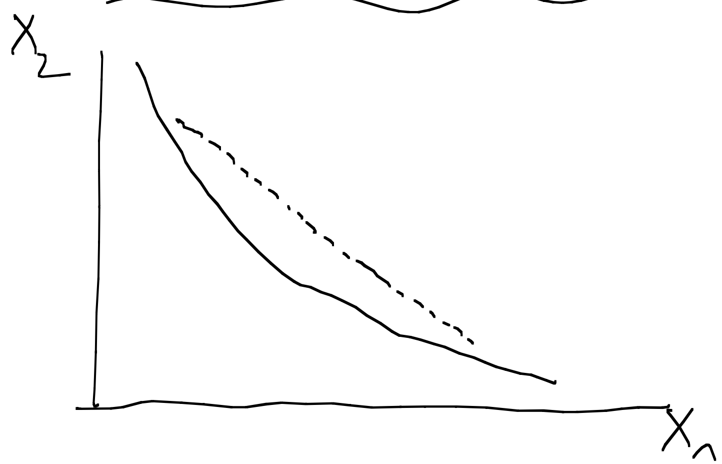
$$\Leftrightarrow x_1^{-\frac{1}{2}-\frac{1}{2}} \cdot x_2^{\frac{1}{2}-\left(-\frac{1}{2}\right)} = \frac{1}{2} \Leftrightarrow x_1^{-1} \cdot x_2^{1} = \frac{1}{2} \Leftrightarrow \frac{x_2}{x_1} = \frac{1}{2}$$

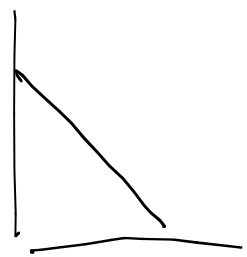
$$\Leftrightarrow x_2 = \frac{1}{2} x_1 \Leftrightarrow \boxed{x_1 = 2 x_2}$$

$$m = p_1 x_1 + p_2 \cdot x_2$$

$$1000 = 4 \cdot x_1 + 8 x_2 = 4 \cdot 2 x_2 + 8 x_2 = 16 x_2$$

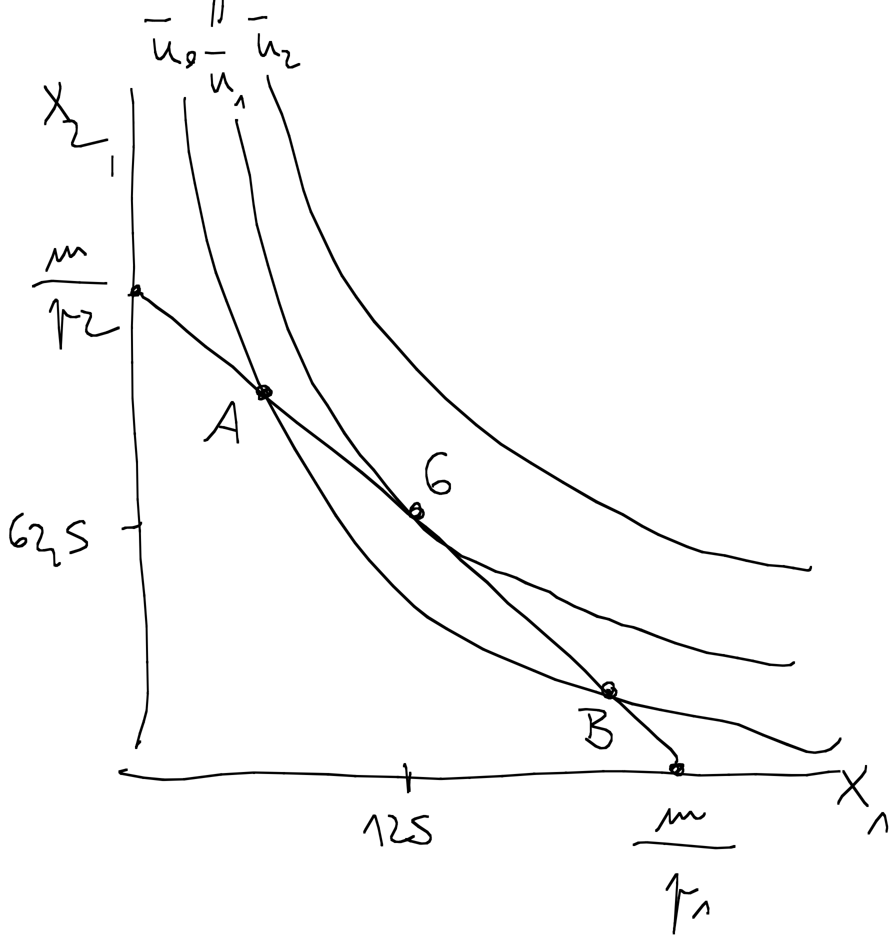
$$\Rightarrow x_2^* = 62{,}5 \qquad x_1 = 2 \cdot 62{,}5 = 125 = x_1^*$$





1 b)

$\sqrt{62{,}5} \cdot \sqrt{125} = 88{,}39$



2 | η : ETA

η = PREISELASTIZITÄT = $\dfrac{\text{REL. MENGEN-ÄNDERG.}}{\dfrac{\Delta p}{p}} = \dfrac{\dfrac{\Delta x}{x}}{\dfrac{\Delta p}{p}}$; Δx ABSOL. MENGENÄNDERUNG

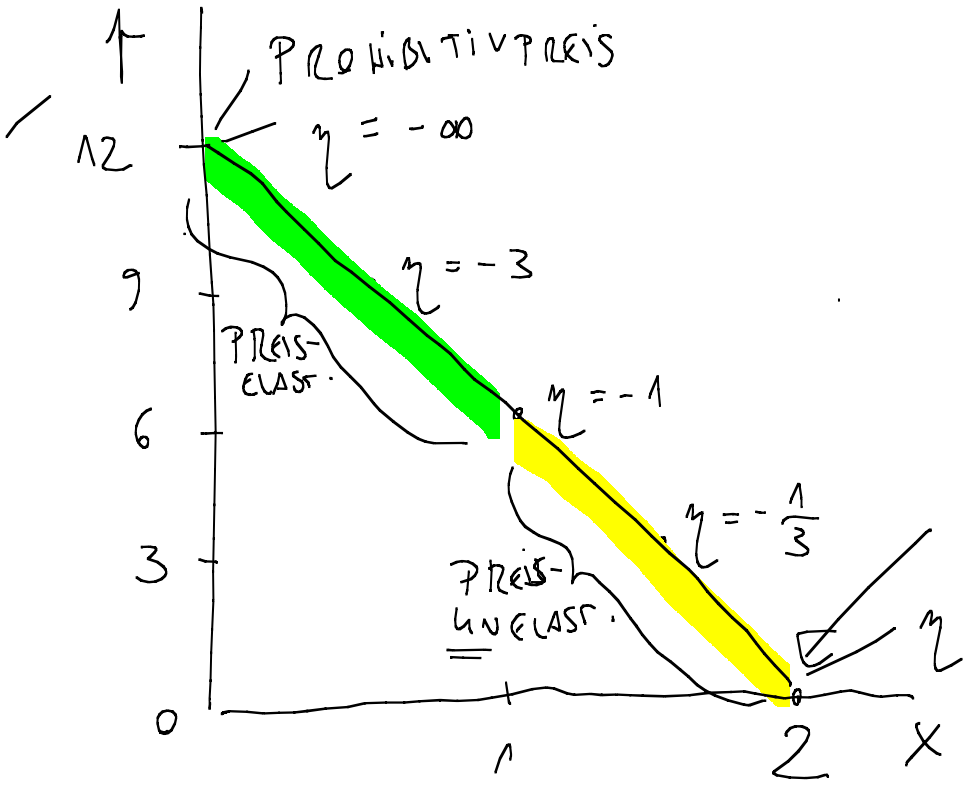
$p \uparrow$ BEWEGT SICH UM a %

$\Rightarrow$ x BEWEGT SICH UM $a \cdot \eta$ %

$$\eta = \frac{\frac{\Delta x}{x}}{\frac{\Delta p}{p}} = \frac{\Delta x}{x} \cdot \frac{p}{\Delta p} = \frac{\Delta x}{\Delta p} \cdot \frac{p}{x} \Rightarrow \eta = \frac{\partial x}{\partial p} \cdot \frac{p}{x}$$

$$p - 12 = -6x$$

$$\Leftrightarrow \quad x = \frac{p - 12}{-6} \quad \Leftrightarrow \quad \boxed{x = 2 - \frac{1}{6} \cdot p}$$



$$\eta = -\frac{1}{6} \cdot \frac{p}{2 - \frac{1}{6} \cdot p}$$

$$= -\frac{1}{6} \cdot \frac{p}{\frac{p - 12}{-6}}$$

$$= -\frac{1}{6} \cdot \frac{(-6)}{p - 12} \cdot p$$

$$= \frac{p}{p - 12} = \eta$$

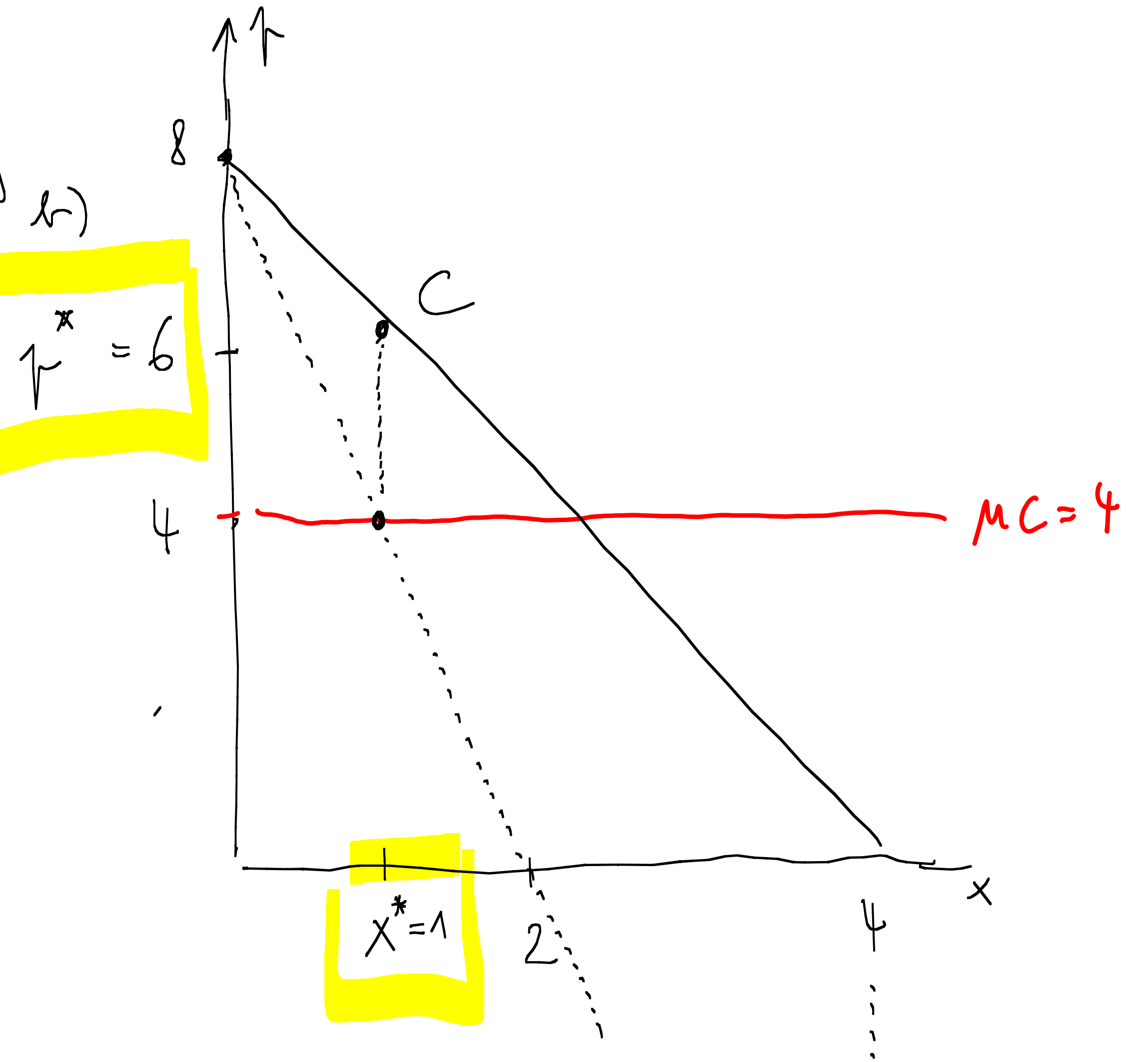
14

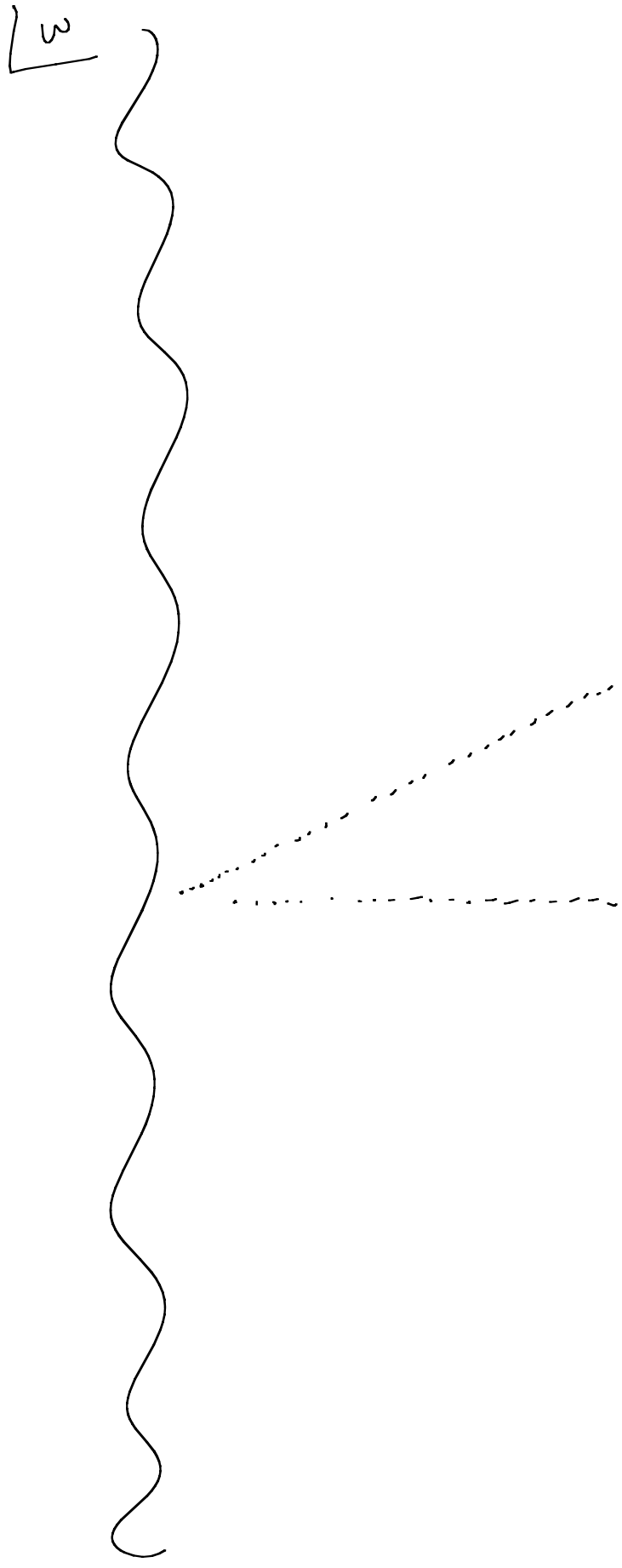
KOCHREZEPT MONOPOL

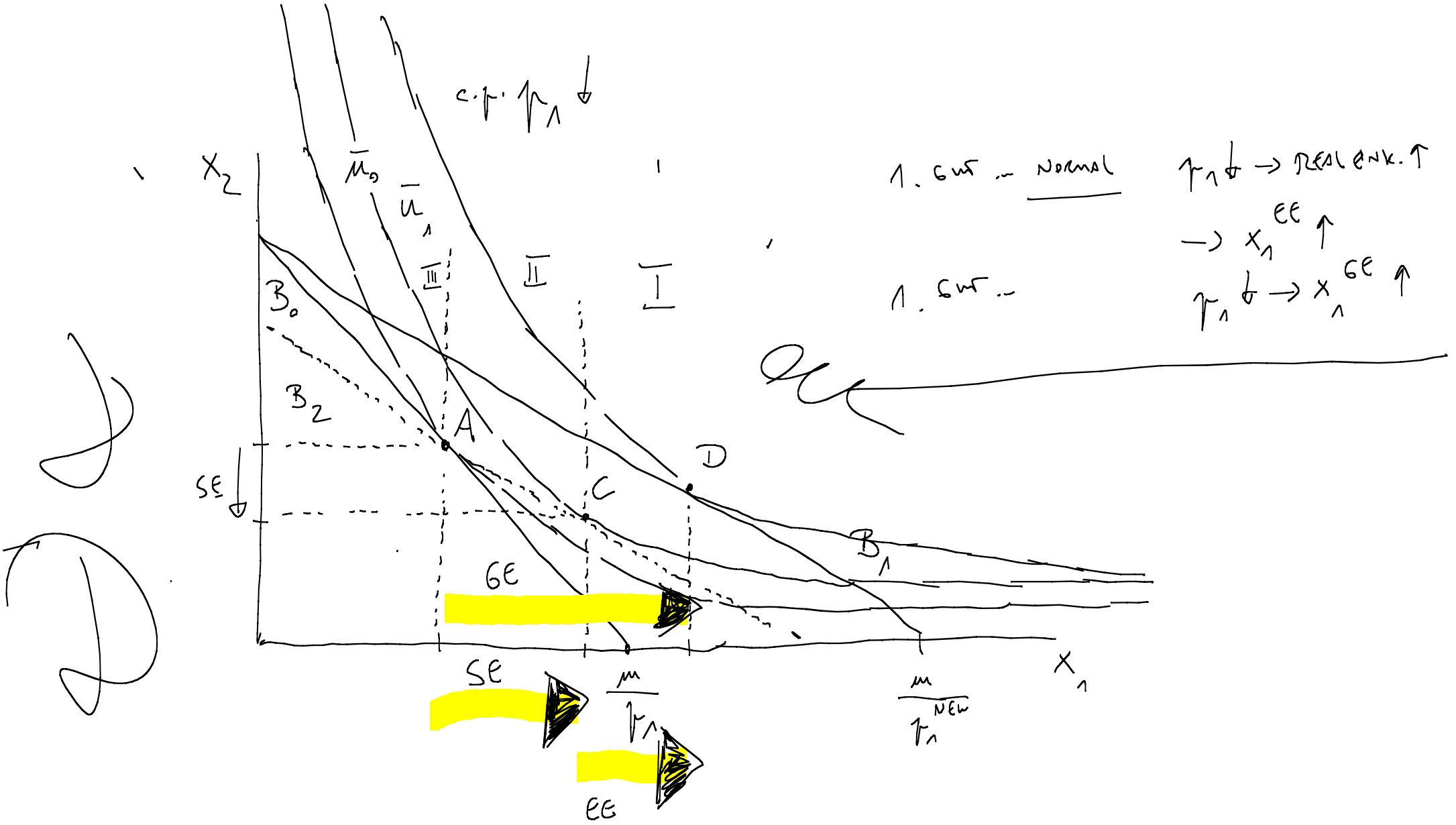
1. $E(x) = p(x) \cdot x$
2. $GE = MR = E'$
3. $GK = K' = MC$
4. $GE = GK$
5. DIES NACH x AUFLÖSEN
6. DIES IN $p(x)$ EINSETZEN

1. $E(x) = (8 - 2x) \cdot x$
   $= 8x - 2 \cdot x^2$
2. $GE = 8 - 4 \cdot x$
3. $K' = (4x + 1)' = 4$
4. $4 = 8 - 4x$
5. $\Leftrightarrow \boxed{x = 1}$
6. $p(1) = 8 - 2 \cdot 1 = 6$

4 b)




3


X_2
$\bar{u}_0$
$\bar{u}_1$
III
II
I
c.p. $\uparrow p_1$
B_0
B_2
A
C
D
B_1
SE
GE
SE
EE
X_1
$\frac{m}{p_1}$
$\frac{m}{p_1^{NEW}}$
1. Gut ... NORMAL
$p_1 \downarrow \rightarrow$ REALEINK. $\uparrow$
$\rightarrow x_1^{EE} \uparrow$
1. Gut ...
$p_1 \downarrow \rightarrow x_1^{GE} \uparrow$