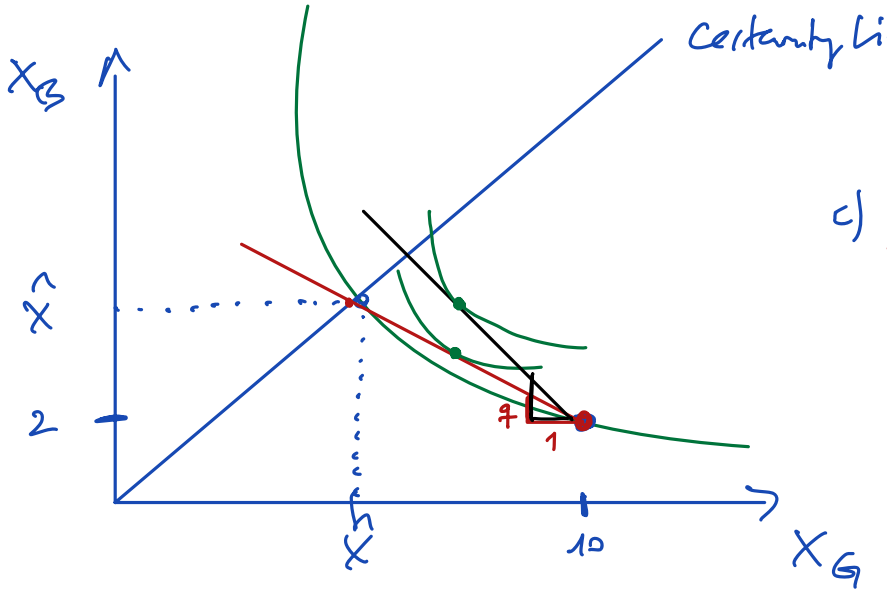
DAY 1

Exercise 1.1

a)



c) Budget Line

b) Certainty Equivalent

$$u(\hat{X}) = E[u(L)]$$

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d) Goal: Trade all risk away

$X_G^{ord} = G = 10$

$X_B^{ord} = B = 2$

$$X_G = X_B$$

$$\underset{10}{G} - T = \underset{2}{B} + q \cdot T$$

$\Leftrightarrow$

$\hookrightarrow$ Solve for T

$$G - B = T + qT \Leftrightarrow$$

$T = \frac{G-B}{1+q\uparrow}\downarrow$

Amount of Trade to get rid of all risk

Optimisation :

$$\max_T EU = p \cdot u(B + qT) + (1-p)\,u(G - T)$$

$B + qT = x_B$; $G - T = x_G$

$\frac{dx_B}{dT}$; $\frac{dx_G}{dT}$

FOC : $\frac{\partial EU}{\partial T} = p \cdot \frac{du}{\partial x_B} \cdot (q) + (1-p) \cdot \frac{du}{\partial x_G} \cdot (-1) = 0$

$\Leftrightarrow$ FOC

$$pq \cdot \frac{du}{\partial x_B} = (1-p)\frac{du}{dx_G}$$

Marginal Benefit of Trade

Marginal Cost of Trade