# ECON1001 经济学导论

## Spring 2023

## quiz 1a

Your Name

Due in class

1. (10 points)

Which of the following is a principle concerning how people interact 下列哪一项是关于人们如何相互影响的原理

(a) Markets are usually a good way to organize economic activity. 市场通常是组织经济活动的好方法

(b) Rational people think at the margin. 理性人考虑边际量

(c) People respond to incentives. 人们会对激励做出反应

(d) All of the above are correct. 以上都是正确的

> **Solution:**
> a

2. (10 points)

Suppose Jim and Tom can both produce baseball bats. If Jim's opportunity cost of producing baseball bats is lower than Tom's opportunity cost of producing baseball bats, then：假设吉姆和汤姆都能生产棒球棒. 如果吉姆生产棒球棒的机会成本低于汤姆生产棒球棒的机会成本, 那么:

(a) Tom must have an absolute advantage in the production of baseball bats. 汤姆在生产棒球球棒方面一定有绝对优势

(b) Jim must have an absolute advantage in the production of baseball bats. 吉姆在生产棒球球棒方面一定有绝对优势

(c) Tom has a comparative advantage in the production of baseball bats. 汤姆在生产棒球球棒方面有比较优势

(d) Jim has a comparative advantage in the production of baseball bats. 吉姆在生产棒球球棒方面有比较优势

> **Solution:**
> d

3. (10 points)

Which of the following events must cause equilibrium price to fall 下列哪个事件必然导致均衡价格下降

(a) demand increases and supply decreases. 需求增加, 供应减少

(b) demand and supply both decrease. 需求和供给都减少了

(c) demand decreases and supply increases. 需求减少, 供应增加

(d) demand and supply both increase. 需求和供给都在增加

> **Solution:**
> c

4. (10 points)

The price elasticity of demand for mobile phones 手机需求的价格弹性

(a) will be higher if there is an improvement in the production technology. 如果生产技术有所改进，弹性会更高

(b) will be lower if consumers perceive mobile phones to be a necessity. 如果消费者认为手机是一种必需品，弹性会降低

(c) is computed as the percentage change in the price of mobile phones divided by the percentage change in quantity of mobile phones. 是用手机价格变化百分比除以手机数量变化百分比来计算的

(d) All of the above are correct. 以上都正确

> **Solution:**
> b

5. (10 points)

If the government removes a \$2 tax on buyers of cigars and imposes the same \$2 tax on sellers of cigars, then the price paid by buyers will 如果政府取消了对雪茄买家的 2 美元税，并对雪茄卖家征收同样的 2 美元税，那么买家支付的价格将会

(a) not change,and the price received by sellers will not change. 不改变，卖方收到的价格也不会改变

(b) not change,and the price received by sellers will decrease. 不改变，卖方收到的价格会降低

(c) decrease,and the price received by sellers will not change. 降低，卖方收到的价格不会改变

(d) decrease,and the price received by sellers will decrease. 降低，卖方收到的价格会降低
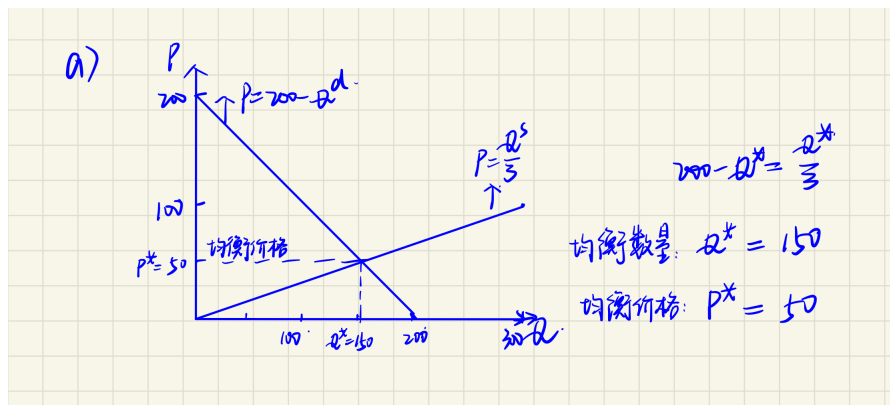
> **Solution:**
>
> a

6. (50 points)

   Suppose that a market is described by the following supply and demand equations: 假设市场由下列供求方程描述：

   $$Q^s = 3P$$

   $$Q^d = 200 - P$$

   (a) (10 points) Graph the supply and demand curves, and mark the equilibrium price and quantity. 画出供给和需求曲线，并标出均衡价格和均衡数量。
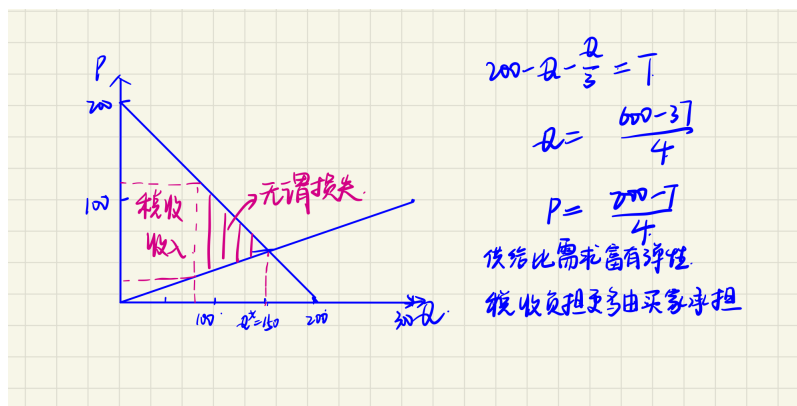
   > **Solution:**
   >
   > 

   (b) (15 points) Suppose that a tax of T is placed on buyers, now buyers and sellers facing different prices and the gap is the tax. ($P^d$ refers to demand side's price, $P^s$ refers to supply side's price) 假设对买家征税 T，现在买家和卖家面临不同的价格，差额就是税。($P^d$ 为需求方价格，$P^s$ 为供应方价格)

   $$P^d = P^s + T$$

Solve for the new equilibrium. Mark the new equilibrium on the graph from a. Buyers or sellers, which side contributes more to the tax and why? 解出新的平衡。在图上标出新的均衡，买家或卖家，哪一方贡献了更多的税，为什么?
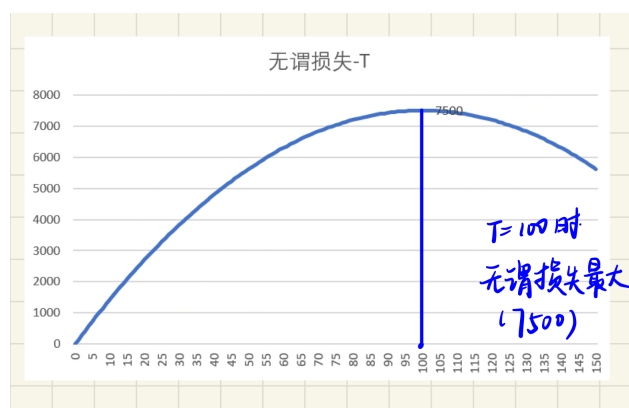
**Solution:**



$$200 - Q - \frac{Q}{3} = T$$

$$Q = \frac{600 - 3T}{4}$$

$$P = \frac{200 - T}{4}$$

供给比需求富有弹性

税收负担更多由买家承担

(c) (10 points) Tax revenue is T*Q. Use your answer from part (b) to solve for tax revenue as a function of T. Graph the relation between revenue and T. 税收是 T*Q。用 (b) 部分的答案求解税收作为 T 的函数。画出税收与 T 的关系图。

**Solution:**

$$T * Q = \frac{600 * T - 3T^2}{4}$$

关系图如下所示:



(d) (15 points) Tax causes deadweight loss. Solve for deadweight loss as a function of T. Graph the relation between deadweight loss and T. 税收导致无谓损失。求解无谓损失 (作为 T 的函数)，绘制无谓损失与 T 的关系图。

**Solution:**

无谓损失： $\dfrac{1}{2} * T * (150 - \dfrac{600 - 3T}{4}) = \dfrac{3T^2}{8}$

### 无谓损失-T