**1. Excise tax.** Demand and supply in the market for bread (which is perfectly competitive, etc.) are determined by the marginal benefit function MB = 160 - 4x and the marginal cost function MC = 40 + 2x, where x is the quantity of bread.

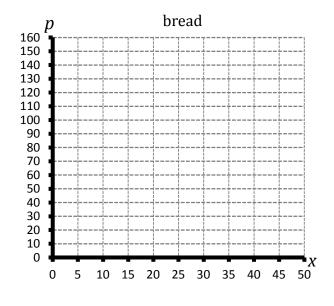
a) If there is no tax, find the equilibrium price, quantity, consumer surplus, producer surplus, and total economic surplus:  $q = \underline{\hspace{1cm}} p = \underline{\hspace{1cm}} CS = \underline{\hspace{1cm}} PS = \underline{\hspace{1cm}} TES = \underline{\hspace{1cm}}$ 

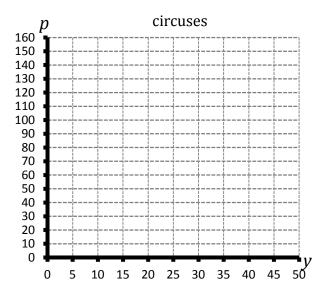
**2. Public good.** Suppose that circuses are a non-rival, non-excludable public good. There are 100 individuals in the society, and each has the same marginal benefit function for circuses, which is  $MB_i = 1 - \frac{1}{50}y$ , where y is the quantity of circuses. The marginal cost of circuses is MC = 10.

**a)** If there is no possibility of collective action, and each roommate must decide privately how many circus performers to employ, then the equilibrium quantity will be \_\_\_\_\_\_, and total economic surplus will be \_\_\_\_\_.

**b**) The socially optimal (Pareto efficient) quantity of circuses is \_\_\_\_\_\_, which gives total economic surplus of \_\_\_\_\_.

**3. Bread and circuses** – **graphs.** Draw all relevant curves. Label CS, PS, GR, and DWL for the bread market. Draw TES for the circus market with the Pareto efficient quantity.



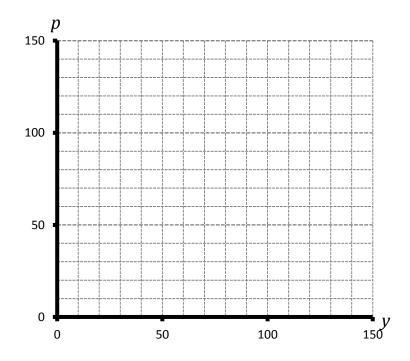


**4. Size of government.** Use the bread and circuses example above to ground both a conservative argument for a small government and a liberal argument for an economically active government. That is, what problem with taxation does the model illustrate? What benefits of public spending does the model illustrate?

- **5. Monopoly.** In the market for Malibu Rum, benefit and cost are defined by the functions MB = 130 q and MC = 10 + q. Pernod Ricard has a monopoly on Malibu Rum, and thus a marginal revenue function MR = 130 2q.
- a) If Pernod Ricard is profitmaximizing, find quantity, price, consumer surplus, producer surplus, and deadweight loss.

$$q =$$
\_\_\_\_\_  $p =$ \_\_\_\_\_  $CS =$ \_\_\_\_\_  $PS =$ \_\_\_\_\_  $DWL =$ \_\_\_\_\_

**b**) On the graph to the right, draw all relevant curves and label *CS*, *PS*, and *DWL* (assuming the monopoly case)..



9. Efficiency and equity
a) Explain what economists mean by 'efficiency', and what they mean by 'equity'. Is one
considered fundamentally more important than the other?
<b>b</b> ) Explain how redistribution might increase equity. Explain how redistribution might decrease
efficiency.

c) Using the core material from the course, give three examples of how governments can improve

efficiency, and one example (aside from redistribution) of how governments can decrease

efficiency.