

15. The demand for ice cream is given by $Q^D = 20 - 2P$, measured in gallons of ice cream. The supply of ice cream is given by $Q^S = 4P - 10$.
- Graph the supply and demand curves, and find the equilibrium price and quantity of ice cream.
 - Suppose that the government legislates a \$1 tax on a gallon of ice cream, to be collected from the buyer. Plot the new demand curve on your graph. Does demand increase or decrease as a result of the tax?
 - As a result of the tax, what happens to the price paid by buyers? What happens to the price received by sellers? How many gallons of ice cream are sold?
 - Who bears the greater burden of the tax? Can you explain why this is so?
 - Calculate consumer surplus both before and after the tax.
 - Calculate producer surplus both before and after the tax.
 - How much tax revenue did the government raise?
 - How much deadweight loss does the tax create?
 - Recalculate deadweight loss from the tax using calculus, and confirm that your answer is the same as in part (h) within rounding.