1. In an address model, each consumer’s ideal product is located at their “address” or location in a product space. When consumers “travel” to the locations of other products, they incur a transport cost.

In a non-address model, there is some positive cross-price elasticity of demand, but it is just assumed to be there without explanation for where it comes from. Differentiated Bertrand is a non-address model; there is just a parameter giving the demand response of one firm’s quantity to the other firm’s price.

One could argue that Android versus iOS is a nice choice between just two alternatives and there is relative unanimity about the relevant features (Android more customizable, iOS more user-friendly). If you buy this argument, then a simple address model like the Hotelling line would be a good choice. My opinion is that this is the better choice for a theoretical model because it is more intuitive and will have similar-enough properties to actual real-world demand.

However, it’s true that the products are very complex and that a spatial model imposes a lot of constraints on consumer preferences. In that case, it might be better to estimate the cross-price elasticity of demand and just put it in a simple demand system model. I believe this is a better choice for an empirical model.

2. TwoTechs. The firm 1 reaction function is shifted further to the right when it has a lower cost. The Cournot equilibrium is at point A when $MC_1 = 40$ and at point B if $MC_1 = 10$. 


3. Contestability_a.

(a) The monopoly solves

$$\max_q \pi(q) = p(q)q - TVC(q) = (100 - q)q - q^2$$

The first order condition is

$$\frac{\partial \pi}{\partial q} = 100 - q - q - 2q = 0$$

Thus,

$$4q = 100 \Rightarrow q_m = 25 \Rightarrow p_m = 75$$

(b) The diagram shows the operating profit (C+D), consumer surplus (A+B), and deadweight loss (E). Note that the operating profit includes all of area C down to the origin because the marginal cost curve is not linear.
An additional source of social loss from monopoly is **rent seeking**. Some of the operating profit will not go to shareholder dividends or productive investment. Instead, some will be spent on lobbying, non-informational advertising, and non-productive investment designed to maintain the monopoly.

(c) The game tree looks like this:

(d) Working up from the bottom of the tree, it is clear that firm 1 will reduce price to $p=65$ at the right node, since $1250+1150>1250$. Thus, if firm 2 enters, it anticipates a payoff of $1200-2300Z$. It will enter if $1200-2300Z > 0$, or $Z<52\%$. This demonstrates how important the residual value or salvage value of a potential entrant’s investment can be to disciplining a monopolist.