ECON 301, Professor Hogendorn, Spring 20132

First Midterm Exam

Each part of a question (a, b, c, etc.) is worth 5 points. Make sure to allot your time accordingly. Total of 30 points, -1 for messiness, -2 for extreme messiness.

When you are finished, please keep the exam sheet and hand in your blue book. Thanks.

1. *DanBrown.* Amazon sells the bestselling novel *Inferno* in different formats. Rounding the prices to the nearest dollar, the e-book edition on the Amazon Kindle costs $15 and the hardcover print edition costs $18.

    There are two types of consumers, affectionately called Inkies and Pixlees. Each type of consumer has $20 of income that they may allocate between the two types of books. (Don't worry about getting answers with fractional books.)

    (a) Write down the budget constraint for buying k units of the Kindle edition (horizontal axis) versus h units of the hardcover edition (vertical axis). Label the vertical and horizontal intercepts.

    (b) Find the slope of the budget constraint by using the total differential.

    (c) Let Pixlees have utility function:

    $$u(k, h) = k^{0.9}h^{0.1}$$

    What is a Pixlee's marginal rate of substitution? What is their utility maximizing consumption of k and h?

(d) Inkies have a quasilinear utility:

$$u(k, h) = (k + 1)^{0.5} + h$$

What do their indifference curves look like? Hint: what is the MRS when k=0?

(e) How many books of each type do Inkies buy when they maximize utility?

2. Suppose there were one single Inky who owned 1 kindle edition and 0 hardcovers. There is also one Pixlee who owns 0 kindle editions and 1 hardcover. The two can trade with one another in an Edgeworth Box. (This of course leaves aside the issue that Amazon won't let you resell a Kindle book.) Draw the Edgeworth box and show the contract curve and the core.