

Problem Set # 4
Econ 2106H - J.L. Turner

1. Mr. Sports Fan has a weekly income of \$ 250 that he spends entirely on football tickets (ft) and basketball tickets (bt). If the price of ft is \$ 20 and the price of bt is \$ 10, then what is his budget constraint (give the equation and the graph)? In your graph, depict what happens if:

- a) His income is reduced to \$ 200.
- b) The price of bt goes up to \$ 15, while income and the price of ft remain constant.
- c) The price of ft is reduced to \$ 5, while income and the price of bt remain constant.

2. a) Elvis likes to consume hamburgers and bacon. He loves to eat fatty foods. In fact, consuming fat is the only thing he cares about, and the more of it the better. Therefore, he only eats the burgers and bacon for their fat content, and he gets no other enjoyment from eating these foods other than from knowing he is increasing his fat intake. He knows that one pound of hamburger meat contains half the fat contained in a pound of bacon. If B represents pounds of bacon and H is pounds of hamburger meat, then draw Elvis' indifference curves with B on the vertical axis and H on the horizontal axis.

b) Instead of fat content, suppose Elvis just cared about the quantity of meat he eats, but assume he still doesn't care if the meat is hamburger or bacon.

c) In general, what do we call goods that have indifference curves that look like this.

3. Suppose Elvis earns \$3 million per year and he spends it entirely on hamburgers and bacon. If bacon costs \$1.50 per pound and hamburger meat costs \$1 per pound, then given Elvis' preferences from question #2, how many pounds of bacon and hamburger meat would Elvis eat per year for a) and b).

4. Tim has two right shoes and one left, but since he has only two legs, he does not use the second right shoe. Similarly, if he had five right shoes and six left shoes, he would throw away the extra left shoe. In other words, Tim likes having left and right shoes in a 1:1 ratio and prefers more shoes to less. Draw Tim's indifference curves for right and left shoes with left shoes on the vertical axis and right shoes on the horizontal. Timothy "the Martian" has three legs, one right and two left, and also, prefers having more to less. Draw Timothy "the Martian" 's indifference curves for right and left shoes. In general, what do we call goods that have indifference curves that look like this.

5. Suppose a candy company produces bags of candy that come in three colors, red, yellow and green. They found green was the most popular so they decided to sell two types of bags -- one bag contains only green candy and the other bag contains a mixture of red and yellow candy. Each bag contains the same number of pieces of candy. Consider two people, Larry and Len. Larry has no preference over color -- they all taste the same to him. Len, being rather eccentric, eats only yellow candy and refuses to eat the other colors. Suppose Larry and Len each have income of \$10 and they spend it all on candy.

- a) Illustrate Len's and Larry's indifference curves for the two types of candy bags.
- b) Draw their budget constraints assuming the green bag costs \$.50 and the mixed bag costs \$2
- c) What is the optimal bundle of candy for each person? Show this on the graph.
- d) What would happen if the price of the green bag increased to \$2.01.