

Intermediate Micro Consumer Theory Practice Problems

True/False

- _____ 1. If you know the slope of the budget constraint for two goods, X and Y, then you know the prices of the two goods, X and Y. Explain.

Short Answer

You must show your work in order to receive full credit.

2. Mr. Smith likes cashews better than almonds and likes almonds better than walnuts. He likes pecans equally well as macadamia nuts and prefers macadamia nuts to almonds. Assuming his preferences are transitive, which does he prefer?
3. Picabo, an aggressive skier, spends her entire income on skis and bindings. (Binding are the mechanism by which skiers attach their boots to the skis.)
 - a. If Picabo wears out one pair of bindings for every one pair of skis, graph her indifference curves for skis and bindings, illustrating bindings on the horizontal axis and skis on the vertical axis.
 - b. If Picabo wears out two pairs of bindings for every one pair of skis, graph her indifference curves for skis and bindings, illustrating bindings on the horizontal axis and skis on the vertical axis.

Now assume that Picabo has \$5,760 in income to spend on binding and skis each year. Skis cost \$480 per pair, and bindings cost \$240 per pair.

- c. Graph Picabo's optimal consumption bundle for skis and bindings under the assumptions in part a).
 - d. Graph Picabo's optimal consumption bundle for skis and bindings under the assumptions in part b).
4. Paula, a former actress, spends all her income attending plays and movies. She likes plays exactly three times as much as she likes movies.
 - a. Graph Paula's indifference curves, illustrating plays on the horizontal axis and movies on the vertical axis.
 - b. Paula earns \$120 per week. If tickets to plays cost \$12 each and tickets to movies cost \$5 each, graph her optimal consumption bundle, illustrating plays on the horizontal axis and movies on the vertical axis.
5. Sally likes peppermint candy canes in her hot chocolate. Specifically, she will only drink hot chocolate with 2 candy canes in each cup. Sally has a weekly income of \$15 to spend on hot chocolate and candy canes. Hot chocolate costs \$1.50 per cup.

For the purposes of deriving Sally's demand curve for candy canes, use the following three prices for candy canes: $P_1 = \$0.25$, $P_2 = \$0.50$, and $P_3 = \$0.75$. Draw two separate graphs. On the top graph, illustrate the three optimal consumption points. On the bottom graph, illustrate Sally's demand curve.

Intermediate Micro Consumer Theory Practice Problems Answer Section

TRUE/FALSE

1. F

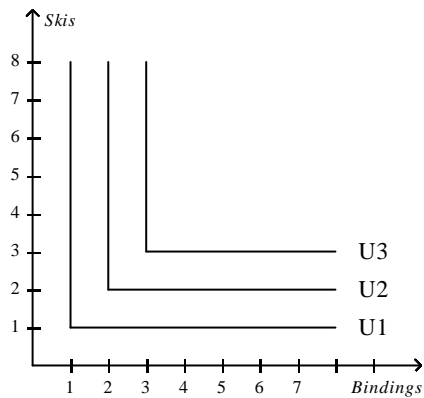
You would know the ratio of the two prices but not each individual price. For example, suppose the slope of the budget constraint is -2. P_x could equal 4 and P_y could equal 2, but P_x could equal 8 and P_y could equal 4, etc.

SHORT ANSWER

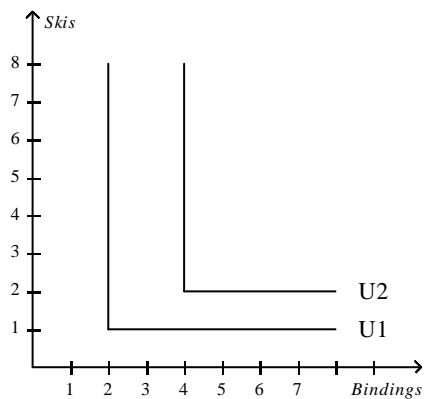
2. $C > A > W$ and $P \sim M > A$. Therefore $P \sim M > A > W$.

- a. $P > W$
- b. $M ? C$ -- not enough information to determine

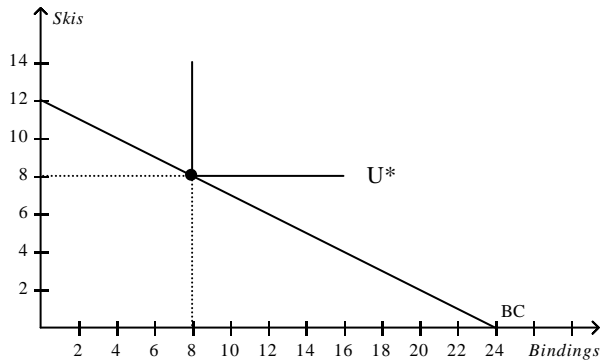
3. a.



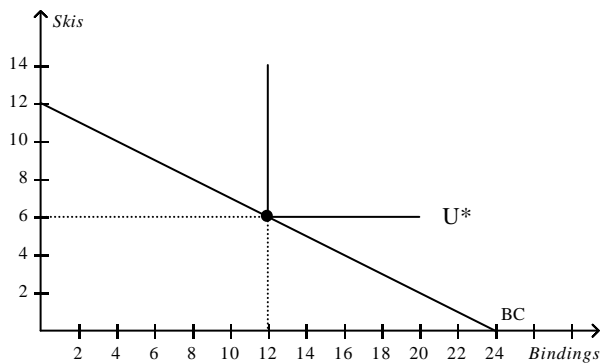
b.



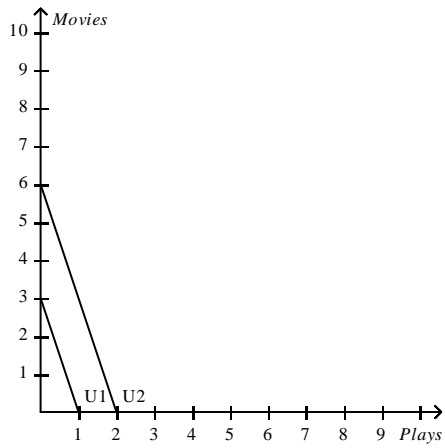
- c. The cost of one “bundle” is 1 ski + 1 binding = $\$480 + \$240 = \$720$.
 $5760/720 = 8$ “bundles”
The optimal choice point is $S^*=8$ and $B^*=8$.



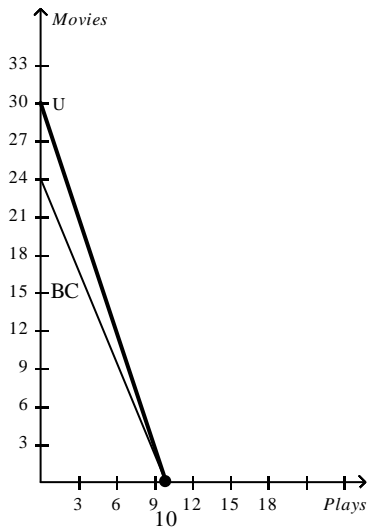
- d. The cost of one “bundle” is 1 ski + 2 bindings = $\$480 + \$240 + \$240 = \960 .
 $5760/960 = 6$ “bundles”
The optimal choice point is $S^*=6$ and $B^*=12$.



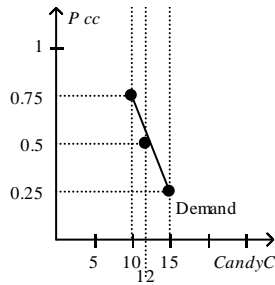
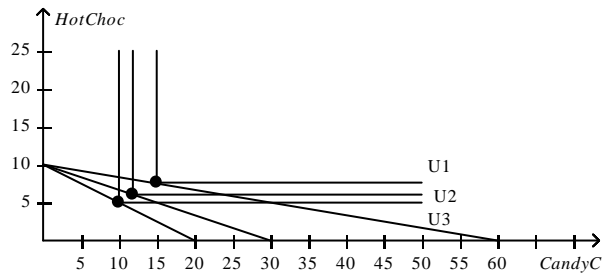
4. a.



4. b. The indifference curve is in bold. The budget constraint is not bold. 3 movies cost \$15; 1 play costs \$12. Plays are cheaper, so Paula should spend all her money on plays. $\$120/\$12=10$ plays. The optimal choice point is 10 plays and 0 movies.



5.



Hot chocolate and candy canes are perfect complements. To solve for the optimal choices, we determine how many “bundles” we can afford.

For the first price of candy canes of \$0.25, each “bundle” costs \$2 ($=\$1.50+\$0.25+\0.25). $\$15/\$2=7.5$ “bundles.” Because each “bundle” contains 1 hot chocolate and 2 candy canes, the optimal choice point is $HC^*=7.5$ and $CC^*=15$.

For the second price of candy canes of \$0.50, each “bundle” costs \$2.50 ($=\$1.50+\$0.50+\0.50). $\$15/\$2.50=6$ “bundles.” Because each “bundle” contains 1 hot chocolate and 2 candy canes, the optimal choice point is $HC^*=6$ and $CC^*=12$.

For the third price of candy canes of \$0.75, each “bundle” costs \$3 ($=\$1.50+\$0.75+\0.75). $\$15/\$3=5$ “bundles.” Because each “bundle” contains 1 hot chocolate and 2 candy canes, the optimal choice point is $HC^*=5$ and $CC^*=10$.