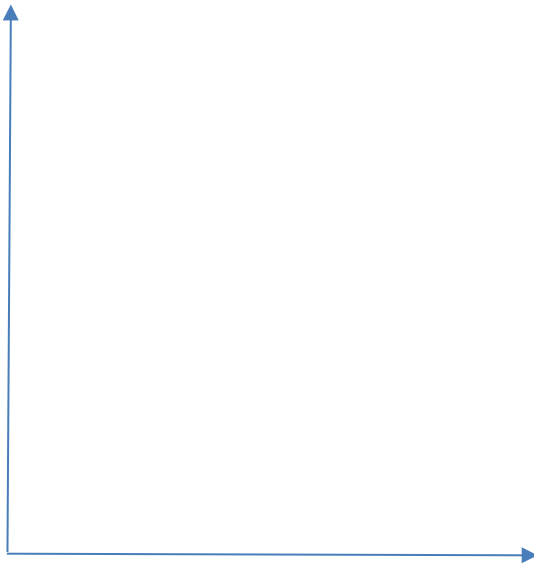


Instructions: Complete each part of each problem. Ensure that you label all axes and curves, and numbers as needed.

1. Draw the budget line for Meatwad, who spends his entire income ($M = \$40$) on PeePantz music videos (y -axis, $P_{MV} = \$5$) and Cheez Whiz (x -axis, $P_{CW} = \$4$).



- a. What is the slope of Meatwad's budget line? Show your work.

- b. What equation describes Meatwad's budget line? Start from $M = P_{MV} \cdot MV + P_{CW} \cdot CW$, then solve for the vertical intercept, MV . Finally substitute some numbers for the variables in the equation to demonstrate it's correct.

- c. Show what happens to Meatwad's budget line if, simultaneously, Master Shake steals \$20 from Meatwad AND the price of music videos (P_{MV}) increases to \$10.

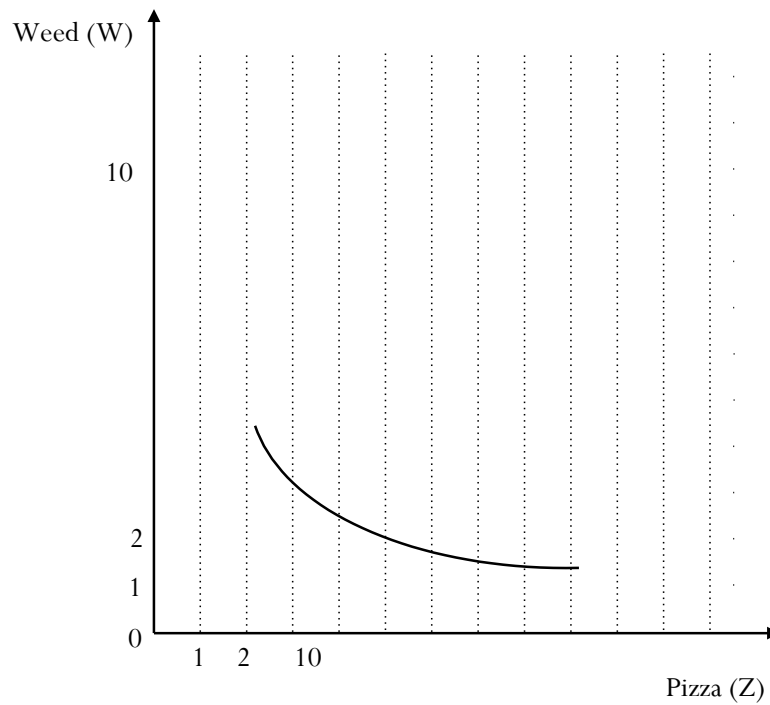
2. Despite Mr. Hand's attempts to change his student's behavior, Jeff Spicoli spends his entire daily allowance ($M = \$20$) on weed and pizza. The price of weed (P_w) is \$5 per bag and the price of pizza (P_z) is \$2 per slice. Spicoli's relative preferences for the goods are shown by the IC in Figure 2a-b.

a. Draw the budget line on the figure. Then indicate Spicoli's optimal bundle of goods (label the point 'A').

b. Next show what happens if P_z rises to \$3. Be sure that you clearly indicate what happens to the budget line, his IC, and the quantities of goods consumed.)

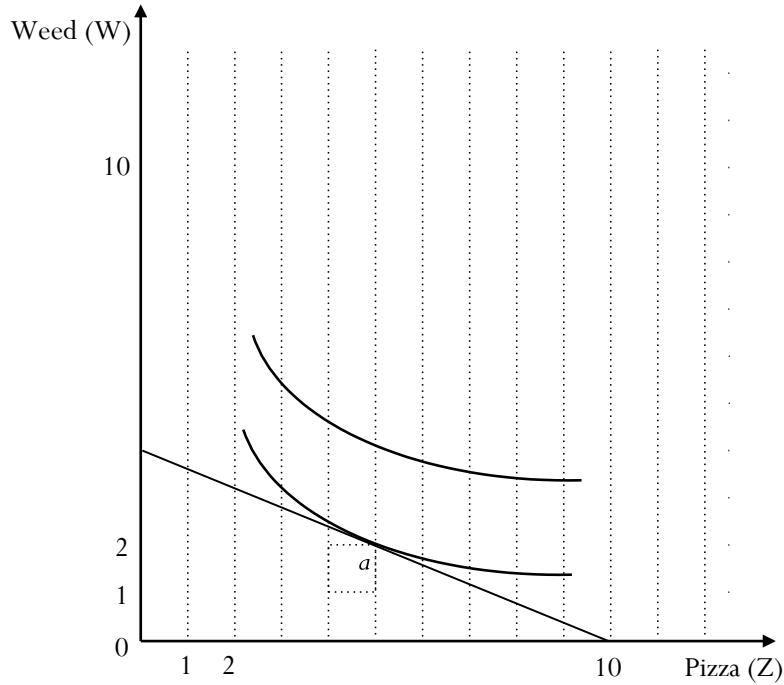


Figure 2a-b



- c. Spicoli is initially consumed at the optimal point a in Figure 2c. Now suppose the government gives all high school students 2 bags of weed, just to help them “chill-out” while studying. How would this affect Spicoli’s budget line and his consumption choices? Draw the new budget line. Also label his original indifference curve $S1$, his new IC $S2$, and his new optimal consumption bundle b .

Figure 2c



- d. Continuing with the situation described in c , suppose Gina strongly dislikes weed, but likes pizza. Draw her indifference curve on Figure 2c, and label it $G1$. Label her optimal consumption point d . Next draw another indifference curve for Gina if government *not only gives students 2 units of weed, but it actually forces them to smoke it too*. Label this indifference curve $K2$ and show her optimal consumption (label it e). Under which situation is Gina better-off? How do you know?

3. What is a corner solution? Explain briefly. Can there be a corner solution if the consumer likes both goods?

4. Figure 4 shows Donny Dumbass's budget and preferences for low-carb cigarettes and a composite good. Donny's income is $M = \$10$.
 - a. What is the price of cigarettes? Show your calculation.

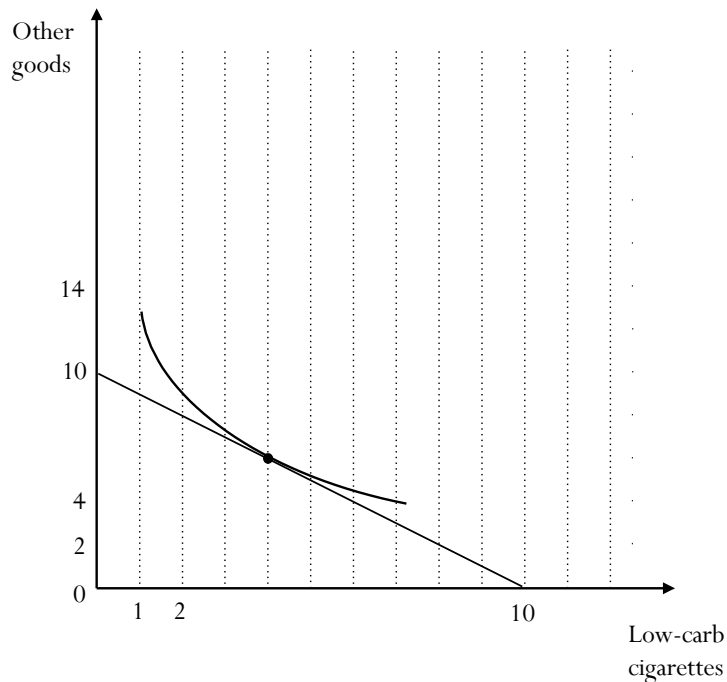
 - b. Does Donny like cigarettes? How do you know?

 - c. Draw two new budget lines (and label them) to represent the cases when
 - (i) Donny's income is cut in half, and
 - (ii) his income is doubled from the original budget of \$10.

 - d. Draw two additional indifference curves and show the optimal consumption bundles for the budget lines drawn in part c, assuming cigarettes are *inferior goods* for Donny.

 - e. Finally, draw the income-consumption curve (ICC) for Donny.

Figure 4

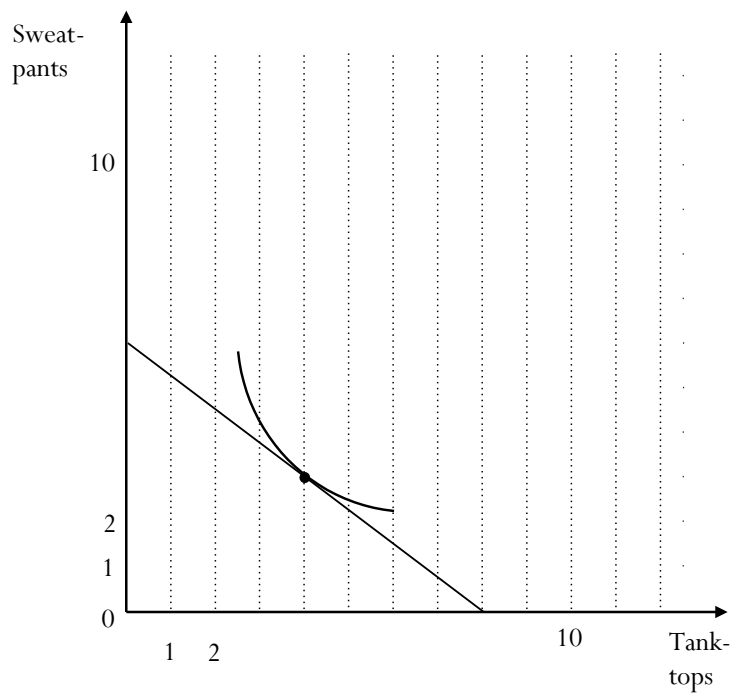


5. Carl lives near the southern Jersey shore, where he enjoys wearing sweatpants and tank-tops, and yelling at his neighbors. His consumption behavior is illustrated in Figure 5.

a. The price of tank-tops (P_T) is \$3. Find the price of sweatpants (P_S) and Carl's annual income (M). Show your work.

b. Draw the new budget line if P_S rises to \$6 and Carl's income (M) rises by 50% at the same time. Draw a new IC and illustrate Carl's new optimal consumption bundle.

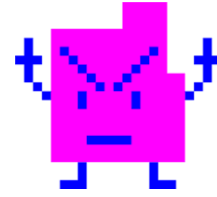
Figure 5



c. Is Carl better off after the changes in part b, or was he happier in the initial situation? How do you know?

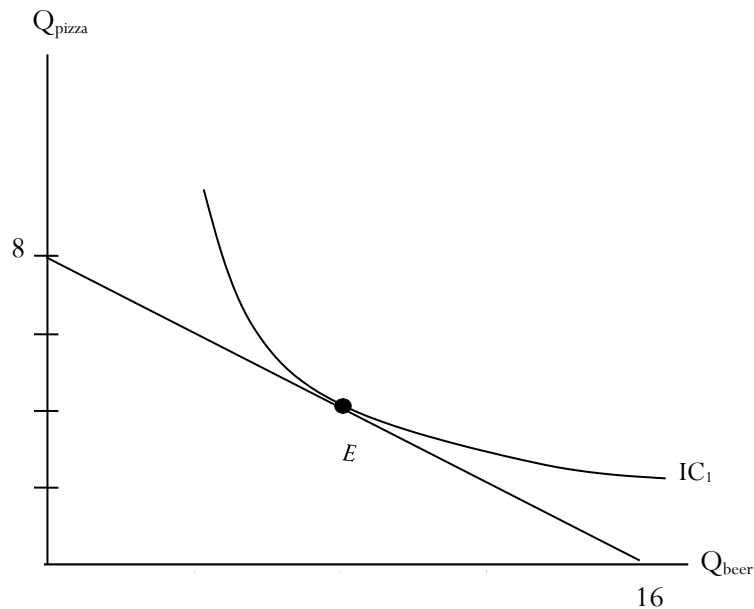


6. Err's budget and indifference curve are shown in Figure 6. His optimal consumption is labeled E .



- Suppose the price of beer (P_b) doubles. Draw the budget line that reflects the new price of beer. Then draw a new indifference curve (IC_2) to show his optimal consumption bundle after the price change. Label the new optimal point F .
- Decompose the total effect of the price change into the substitution and income effects. Label the directions and magnitudes of change for S, I, and T effects.

Figure 6



- Explain the “substitution effect” and “income effect” as if you were explaining it to a friend who has never taken an economics class.
- What does it mean that “the substitution effect is always negative, but the income effect can be positive or negative”?