Consumers in the Marketplace

4. If you consume are wine and roses. On
  Tuesday, the price goes up, and at the same time your income
  rises. Draw a diagram illustrating your relative happiness.
  What is the direction of the income effect?
  Why?
  a. If $X$ is a normal good, what is the direction of the income effect?
  Why?
  b. If $X$ is an inferior good, what is the direction of the income effect?
  Why?
  c. **True or False:** If $X$ is an inferior good, then a fall in price must lead to
  a rise in consumption, but if $X$ is a normal good, then a fall in price
  might lead to a fall in consumption. Justify your answer carefully in
  terms of income and substitution effects.

7. Suppose the only goods you buy are wine and roses.

a. Between Monday and Tuesday, the price of wine goes up (while your
   income remains fixed). Draw a diagram, with wine on the horizontal
   axis and roses on the vertical, to illustrate how your budget line
   moves. Illustrate your optimum points on the two budget lines, label-
   ing Monday's optimum $M$ and Tuesday's optimum $T$.

b. On Wednesday, the price of wine returns to its Monday level, but at
   the same moment your income falls by just enough so that you are
   just as happy on Wednesday as on Tuesday. Draw Wednesday's opti-
   mum point and label it $W$.

In each of parts (c), (d), and (e), determine whether the statement is (1)
true always, (2) false always, (3) true if wine is an inferior good, but other-
wise false, (4) false if wine is an inferior good, but otherwise true, (5)
true if wine is a Giffen good, but otherwise false, or (6) false if wine is a
Giffen good but otherwise true.

c. $M$ is to the left of $T$.
d. $T$ is to the left of $W$.
e. $M$ is to the left of $W$.

f. **True or False:** Every Giffen good is an inferior good. Justify your
   answers by using the earlier parts of this problem, not by using
   the argument given in the text.

8. Suppose the only two goods you consume are $X$ and $Y$. On Tuesday, the
   price of $Y$ (not $X$!) goes up. On Wednesday, there are no new price
   changes, but your income rises by just enough so that you can exactly
   afford Monday's basket.

a. Use a diagram, with $X$ on the horizontal axis and $Y$ on the vertical, to
   illustrate your budget lines and optimum points on Monday, Tuesday,
   and Wednesday. Label the optimum points $M$, $T$, and $W$.

b. In terms of the locations of points $M$, $T$, and $W$, what would it mean
   for $X$ to be an inferior good?

c. Is it true that $W$ is always to the right of $M$? If so, how do you know?
   If not, what would your answer depend on?

d. Call $X$ a **Figgen good** if it is true that "when the price of $Y$ goes up, the
   quantity demanded of $X$ goes up." In terms of points $M$, $T$, and $W$, what
   would it mean for $X$ to be a Figgen good?

e. **True or False:** Every inferior good is a Figgen good.

f. **True or False:** Every Giffen good is a Figgen good.