1. (a) Figure 1 shows the PPF for Toyota.

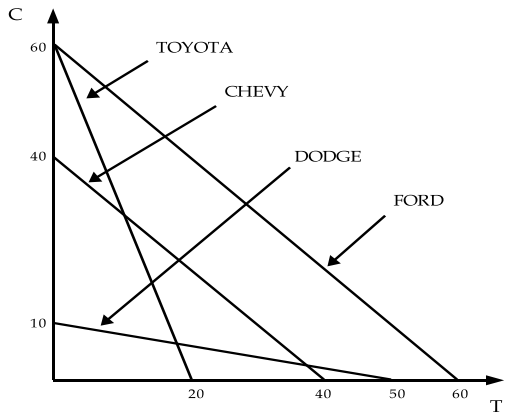

Figure 1: The Individual Companies' PPFs

(b) Figure 2 shows the combined PPF.

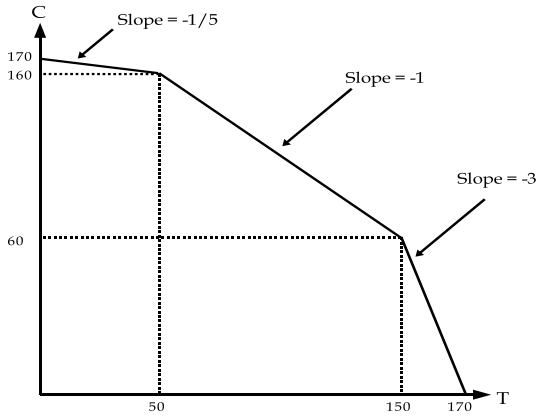

Figure 2: The Combined PPF

(c) TDFC's profit is equal to

$$\pi = 1000T + 2000C \tag{1}$$

Solving for C gives the equation for the iso-profit lines:

$$C = \frac{\pi}{2000} - \frac{1}{2}T \tag{2}$$

The highest iso-profit line attainable is shown in figure 3; notice that its slope is between the slopes of the two adjacent segments of the PPF. TDFC will produce 160 cars and 50 trucks.

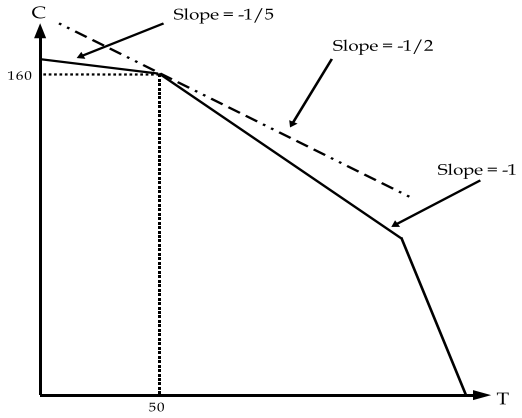

Figure 3: TDFC's Output Choice

(d) When the price of cars declines to \$1,000, the slope of the iso-profit lines becomes -1. As figure 4 shows, the new highest iso-profit line is tangent to the PPF everywhere between the points (50,160) and (150,60). The firm will choose one of the points in this range, but it is impossible to say which one.

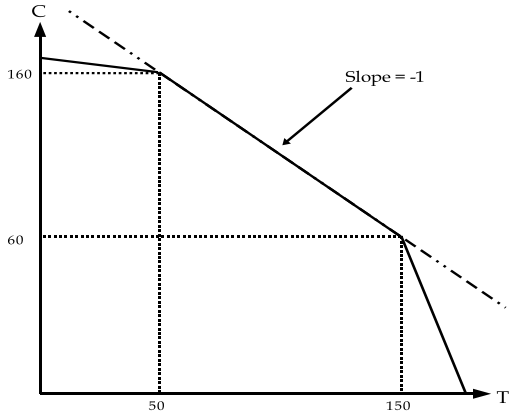

Figure 4: A Fall in the Price of Cars

2. (a) Figure 5 depicts Bond's budget constraint.

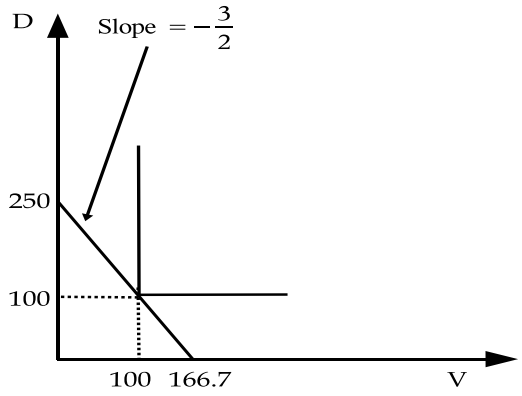

Figure 5: Bond's Consumption Bundle

(b) Given that Bond likes his martinis to have exactly one shot each of vodka and vermouth, he views vodka and vermouth as perfect complements. His indifference curves therefore have an L-shape, and he will always consume vodka and vermouth in a 1:1 ratio. If he buys 100 shots of each he will complete exhaust his income and maximize his utility. Figure 5 illustrates.

(c) Figure 6 depicts the effect of a fall in the price of vodka on Bond's budget constraint when his income is Y and the prevailing prices are p_v and p_d. His new consumption bundle must be between points A and B, which means that his consumption of vodka must increase. Thus, the demand curve for vodka is downward sloping.

(d) Bond now cares only about alcohol content, so he views vodka and vermouth as substitutes. A shot of vodka delivers twice the alcohol that a shot of vermouth does, so Bond values one shot of vodka the same as two shots of vermouth. Figure 7 depicts his highest indifference curve. Its slope is -2

(e) A shot of vodka is worth as much as two shots of vermouth but cost less; thus, Bond will spend his entire income on vodka. Figure 7 depicts the situation.

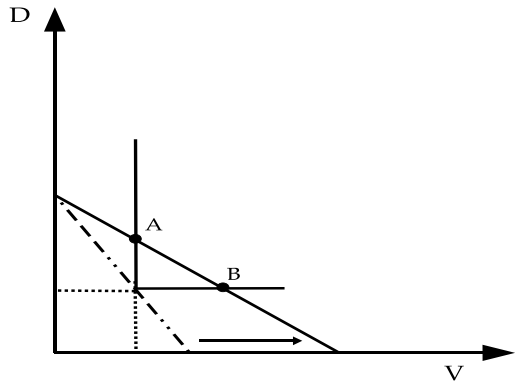

Figure 6: A Fall in the Price of Vodka

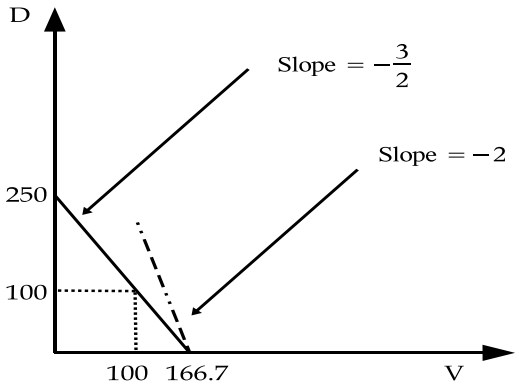

Figure 7: Bond's New IC and Consumption Bundle