Version A

1. (a) Wholesale demand is very price inelastic.

\[ p \uparrow \rightarrow q \]

(b) Retail supply is unlimited at regulated price.

\[ p \uparrow \rightarrow q \]

(c) Blackout means excess demand.

\[ Q_{max} \leq Q_D \text{ at regulated price.} \]

2. (a) \[ \frac{dy}{dx} \]

(b) \[ \frac{dy}{dx} \]

(c) \[ \frac{dy}{dx} \]

3. (a) \[ MR_S = -\frac{dQ}{dx} = -\frac{d}{dx}\left(\frac{80}{x^2}\right) = \frac{80}{x^2} \]

(b) \[ MR_S = \frac{P_x}{P_c} \Rightarrow \frac{80}{x^2} = 2 \Rightarrow x^2 = 40 \Rightarrow x = 10 \text{ espresso.} \]

(c) \[ x = 10 \Rightarrow y = \frac{80}{10} = 8 \Rightarrow \text{Income} = 10 \times 4.2 + 8 \times 2.5 = 40. \]

4. (a) \[ e = -\frac{\Delta Q/Q}{\Delta P/P} = -\frac{(22 - 23)/23}{(40 - 60)/40} = \frac{23}{12} = 0.19 \]

(b) \[ P \uparrow \Rightarrow Q \uparrow \text{ if } Q \uparrow \text{ more then } P \downarrow \Rightarrow e > 1 \text{ (Price elastic).} \]

(c) \[ x = 100 - 4 \times 10 - 4 \times 5 + 2 \times 10 = 240 \]

\[ p = -\frac{dx}{dp} = -4 \times \frac{10}{240} = \frac{10}{6} = 0.16 \]
5. See Version A

Multiple Choice

Ques 1 2 3 4 5
Version A d b b d b
Version B d a a a a

1. Hot dog

2. *L-shaped* higher indifference curve.

3. (a) Substitute $E_1 \Rightarrow E_x$ \[ (E_x: \text{old utility}) \]
(b) Income $E_1 \Rightarrow E_2$ \[ (E_1: \text{new prices}) \]
(c) Different answer possible.

For my diagram $p \uparrow \Rightarrow x \downarrow$ so non-Giffen.

4. 

5. See Version A