V6

3. $Q_d = 1750 - 50P$ $\quad Q_s = \frac{100}{3}P$

$Q_s = Q_d \Rightarrow 1750 - 50P = \frac{100P}{3}$

$1750 = \frac{250P}{3}$

$P = 21$

$Q = 700$

$Q_d = 1750 - 50P$

$0 = 1750 - 50P$

$P = 35$

b) Tax of \$5

$Q = \frac{100}{3}P$

$5 + \frac{3Q}{100} = P$

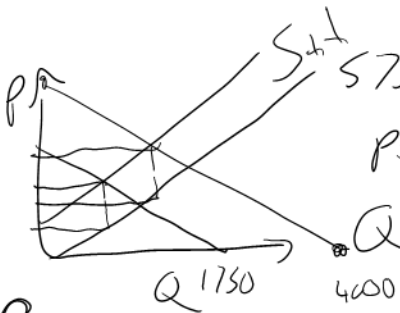
$\frac{100P}{3} - \frac{500}{3} = Q$

$1750 - 50P = \frac{100P}{3} - \frac{500}{3}$

$5750 = 250P$

$P = 23$

$Q = 600$




f) $Q = 4000 - 50P$

$0 = 4000 - 50P$

$P = 200$

a. True. The maximum willingness to pay is given by the price intercept of the inverse demand function, \$35.00
b. False. The equilbrium price is equal to \$21.00
c. True. The equilibrium quantity is equal to 700
d. False. The new equilibrium quantity is equal to 600
e. True. The new equilibrium quantity is equal to 600 and the price is equal to 23
f. True. The increase in demand, all else equal, means an increase in quantity which means an increase in tax revenue.

Vs $2000 - 50P = 50P$

$2000 = 100P$

$P = 20$

$Q = 1000$

$Q = 50P \Rightarrow P = \frac{Q}{50} + 5$

$Q = 50P - 250$

$2000 - 50P = 50P - 250$

$2250 = 100P$

$P = 22.50$

$Q = 875$

V4 $1400 - \frac{100P}{3} = \frac{100P}{3}$

$1400 - \frac{100P}{3} = \frac{100P}{3}$

$1400 = \frac{200P}{3}$

$P = 21, Q = 700$

b) $Q = \frac{100}{3} P$

$+tax \Rightarrow P = \frac{3Q}{100} + 5$

$\frac{100P}{3} - 200 = 1400 - \frac{100P}{3}$

$\frac{200P}{3} = 1600$

$P = 24, Q = 600$

a. False. The maximum willingness to pay is given by the price intercept of the inverse demand function, $42.00
b. False. The equilbrium price is equal to $21.00
c. True. The equilibrium quantity is equal to 700
d. False. The new equilibrium quantity is equal to 600
e. True. The new equilibrium quantity is equal to 600 and the price is equal to 24
f. True. The increase in demand, all else equal, means an increase in quantity which means an increase in tax revenue.

a. False. The maximum willingness to pay is given by the price intercept of the inverse demand function, $40.00

b. False. The equilbrium price is equal to $20.00

c. True. The equilibrium quantity is equal to 1000

d. False. The new equilibrium quantity is equal to 875

e. True. The new equilibrium quantity is equal to 875 and the price is equal to 22.5

f. True. The increase in demand, all else equal, means an increase in quantity which means an increase in tax revenue.

$Q_D = 200 - \frac{P}{3}$ $\quad Q_S = \frac{P}{3}$

$200 = \frac{2P}{3}$

$P = 300$

$Q = 100$

Tax

$Q = P/3 \Rightarrow$ tax added $P = 3Q + 12$

$3Q + 12 = P \Leftrightarrow Q = \frac{P}{3} - 4$

$\frac{P}{3} - 4 = 200 - \frac{P}{3}$

$P = 306, Q = 98$

$P_{int} \Rightarrow 0 = 200 - \frac{P}{3}$, so intercept $= 600$.

$Q = 400 - P$ $\quad Q = \frac{1}{4}P$

$\Rightarrow 400 = \frac{5P}{4}$ $\quad$ int $= 400$

$P = 320$

$Q = 80$

tax

$P = 4Q + 10$

$Q = \frac{P}{4} - \frac{10}{4}$

$\frac{P}{4} - \frac{10}{4} = 400 - P$

$5P = 1610$

$P = 322$

$Q = 78$

V6 $Q_D = 250 - \frac{P}{2}$ $\quad Q_S = \frac{P}{3}$

$\frac{P}{3} = 250 - \frac{P}{2}$

$250 = \frac{5P}{6}$

$P = 300$

$Q = 100$

tax $\Rightarrow Q = \frac{P}{3} \rightarrow P = 3Q + tax$

$P = 3Q + 10$

$Q = \frac{P}{3} + \frac{10}{3}$

$\frac{P}{3} + \frac{10}{3} = 250 - \frac{P}{2}$

$250 + \frac{10}{3} = \frac{5P}{6}$

$P = 304$

$Q = 98$

P Intercept

$0 = 250 - \frac{P}{2}$

$P = 500$