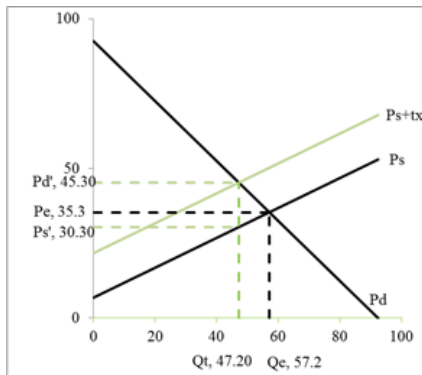


**8. Correct. The answer is true.** From question 7, equilibrium price and quantity were solved to be  $P_e=35.3$  and  $Q_e = 57.2$ . To compute incidence of the tax, first solve for inverse demand,  $P_d=92.5-Q_d$ , and supply  $P_s=6.7 + 0.5Q_s$ . Then set  $P_s + t = P_d$ . Solve for equilibrium  $Q$  from  $P_s = 6.7 + 0.5Q + 15 = P_d = 92.5 - Q. \Rightarrow 1.5Q = 70.8$ . Equilibrium  $Q = 47.2$ . At equilibrium  $Q$ ,  $P_d = 92.5 - 47.2 = 45.3$ .  $P_s = 6.7 + 0.5(47.2) = 30.3$ . Consumer price went from 45.3 to 37.3 for an increase of \$10 and producer price went from 35.3 to 30.3 for a decrease of \$5. Total tax revenues are tax times sales of  $15 \cdot 47.2 = \$708$ .



A quicker but less intuitive way to solve for the effect of a tax when you have direct demand curves is to substitute  $P_s + t$  for  $P_d$  and solve as follows.

$$Q_d = 92.5 - 1(P_s + 15) = Q_s = -13.4 + 2P_s$$

$$92.5 + 13.4 - 15 = 1P_s + 2P_s$$

$$90.9 = 3P_s$$

$$P_s = 90.9/3 = 30.3$$

$$P_d = P_s + 15 = 45.3$$

$$Q = Q_d = 92.5 - 1(45.3) = 47.2$$

$$\text{or } Q = Q_s = -13.4 + 2 \cdot 30.3 = 47.2$$