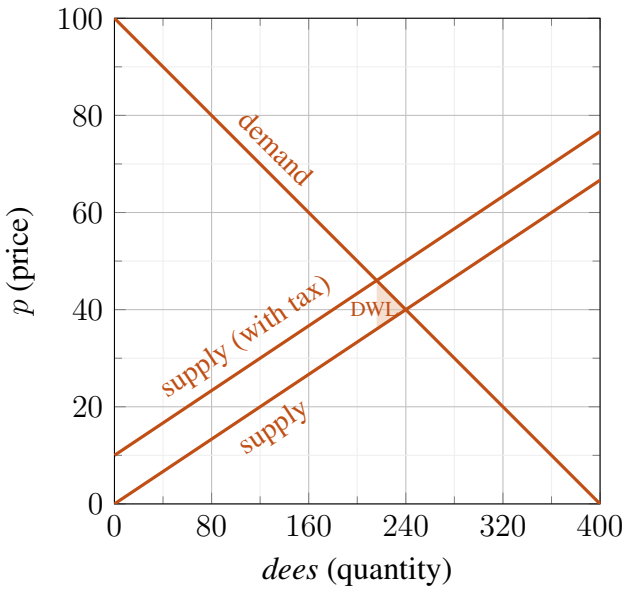
Quiz 8 - SOLUTION

The demand curve for *dees* is $D(P) = 400 - 4P$ and the supply curve $S(P) = 6P$.

- Draw the demand curve and the supply curve on the graph below.



- How much is the equilibrium market price?

$D(P^*) = S(P^*) \rightarrow 400 - 4P^* = 6P^* \rightarrow P^* = 40$

- How much is the equilibrium quantity sold?

$Q^* = D(P^*) = 400 - 4 \cdot 40 = 240$

A quantity tax of \$10 per unit sold is placed on *dees*.

- Draw the new supply curve, where the price on the vertical axis remains the price per unit paid by demanders. $S(P - t) = 6 \cdot (P - 10)$
- How much is the new equilibrium price paid by the demanders?

$D(P') = S(P' - t) \rightarrow 400 - 4P' = 6(P' - 10) \rightarrow P' = 46$

- How much is the new equilibrium price price received by the suppliers?

$P'_S = P' - t = 36$

- How much is the new equilibrium quantity sold?

$Q' = D(P') = 400 - 4 \cdot 46 = 216$

- How much is the deadweight loss due to this tax?

$DWL = \frac{1}{2} \cdot t \cdot (Q^* - Q') = 120$

- On your graph, shade in the area that represents the deadweight loss.