

**Problem #6654** Work out the equilibrium? Given the supply and demand functions, determine the equilibrium price and quantity.  $P = Qs^2 + 11Qs + 75$   $P = -Qd + 103$   
 $Q = P =$ .

**Solution** First, set  $Qs$  (quantity supplied) equal to  $Qd$  (quantity demanded). Denote by  $Q$  their common value. So,  $Q^2 + 11Q + 75 = -Q + 103$ ,  $Q^2 + 12Q - 28 = 0$ , thus  $Q = 2$  and, hence,  $P = -2 + 103 = 101$ .

**Answer**  $Q = 2$ ,  $P = 101$ .