$p^2+10p+5^2= 4200+5^2$
$(p+5)^2= 4225$
$p+5= \sqrt{4225}$; disregard the negative root since p is a positive value.
$p+5=65$
$p= 65-5$
$p= 60$; substitute this to supply function to get q

$q=2p-30$
$= 2(60)-30$
$= 120-30$
q= 90

Substitute q in demand function:
$(p+10)(90-30)=8400$
$(p+10)(60)=8400$
$60p+600=8400$
$p= (8400-600)/60$
p= 130

For equilibrium price ;
$q_s=q_d$
$2p-30= (8400/p+10)-30$
$2p(p+10)=8400$
$2p^2+20p-8400= 0$; find the root, only take the positive root.
$p^2+10p+5^2= 4200+5^2$; as what we get earlier **p = $65, is the equilibrium price**

For the equilibrium quantity;
$p_s=p_d$
$q/2 +15 = (8400/q+30)-10$
$q/2+25 = 8400/q+30$
$q/2(q+30)+25(q+30)= 8400$
$q^2/2 +15q +25q+ 750-8400 =0$
$q^2/2 +40q -7650 =0$; multiply by 2 to eliminate fraction
$q^2+80q-15300=0$; find the roots and take the positive root only

$q^2+80q+40^2=15300+40^2$
$(q+40)^2=16900$
$q +40 =\sqrt{16900}$
$q = 130-40$
q = 90, is the equilibrium quantity

The market equilibrium point (q,p)
(90,65)