

Home

Q demanded = $D = 100 - 20P$
 Q supplied = $S = 20 + 20P$
 In Autarky equilibrium $S = D$
 $20 + 20P_e = 100 - 20P_e$

$40P_e = 80$

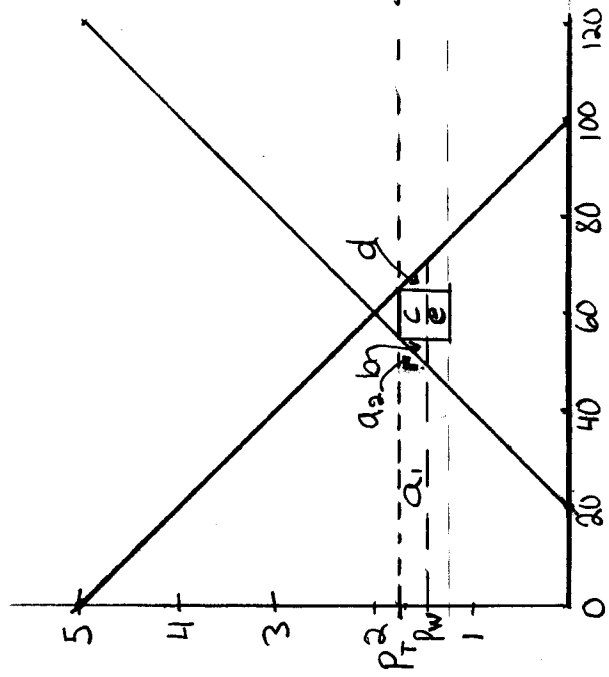
$P_e = 2$

$Q_e = 20 + 20(2) = 60$

Plot two points for D & S

P	D	S
0	100	20
5	0	120

HOME



Foreign

$D^* = 80 - 20P$
 $S^* = 40 + 20P$

Solve for P_e

$40 + 20P_e^* = 80 - 20P_e^*$

$40P_e^* = 40$

$P_e^* = 1$

$Q_e^* = 40 + 20(1) = 60$

Plot two points for D & S

P	D*	S*
0	80	40
4	0	120

Home's Import Demand
 equals $D - S$ (literally)

$M_I = 80 - 40P$

Foreign's Export Supply
 equals $S^* - D^*$

$X = -40 + 40P$

Int'l equilibrium ($M = X$)

$80 - 40P_w = -40 + 40P_w$

$120 = 80P_w$

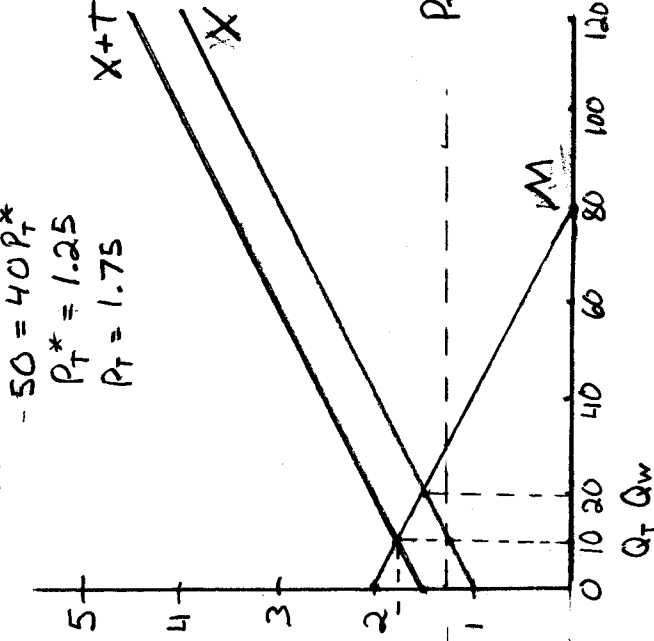
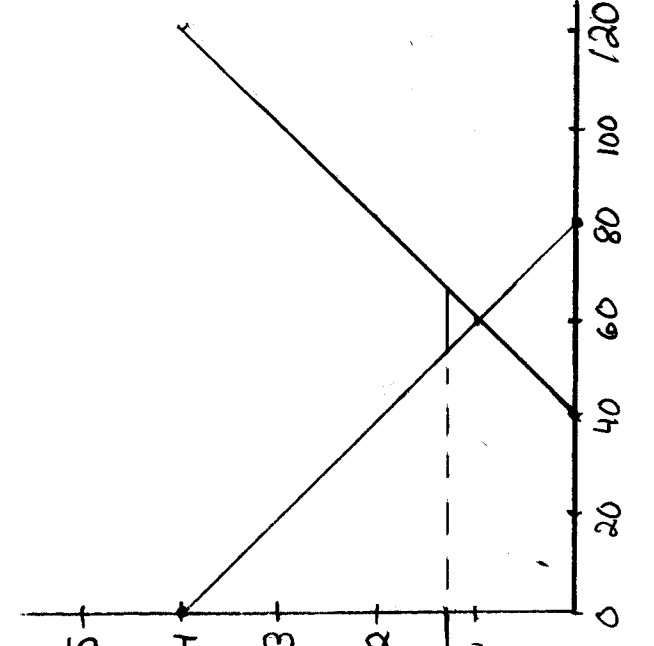
$P_w = \frac{12}{8} = 1.5$

$Q_w = -40 + 40(1.5) = 20$

$Q_T^* = 10 = -40 + 40P_T^*$
 $-50 = 40P_T^*$

$P_T^* = 1.25$

$P_T = 1.75$



Problem 3, page 208

- a. The specific tariff of 0.5 adds to the export supply price. Solve X for P : ($\epsilon = M$ for P)

$$X = -40 + 40P \quad \left(\begin{array}{l} \text{Note:} \\ M = 80 - 40P \end{array} \right)$$

$$X + 40 = 40P$$

$$P = \frac{1}{40}X + \frac{40}{40}$$

$$P = 0.025X + 1 \quad \text{Now add } 0.5$$

$$P_T = 0.025X + 1.5 \quad \text{Now solve for } X$$

$$0.025X = P_T - 1.5 \quad \text{Multiply both sides by } 40$$

$$X = 40P_T - 60 \quad \text{Set } X = M$$

$$40P_T - 60 = 80 - 40P_T$$

$$80P_T = 140$$

$$P_T = \frac{7}{4} = \underline{1.75} \Rightarrow P_T^* = P_T - 0.5 = \underline{1.25}$$

$$Q_T = 80 - 40(1.75) = 80 - 70 = \underline{10}$$

3a (cont.)

- (1) Price of Wheat in Home, $P_T = 1.75$
 " " " " Foreign, $P_T^* = 1.25$

Quantity of Wheat	Demanded	Supplied
Home	$100 - 20(1.75)$	$20 + 20(1.75)$
	$100 - 35$	$20 + 35$
	65	55
	$M = D - S = \underline{10}$	
Foreign	$80 - 20(1.25)$	$40 + 20(1.25)$
	$80 - 25$	$40 + 25$
	55	65
	$X = S - D = \underline{10}$	

b. The effect of the tariff on the welfare of...

- (1) Home's import-competing producers = area a

$$\begin{aligned} & \text{area } a_1 + \text{area } a_2 \\ & (P_T - P_w)(20 + 20P_w) + \frac{1}{2}(P_T - P_w)(S_T - S_w) \\ & (1.75 - 1.5)(20 + 20(1.5)) + 0.5(0.25)(55 - 50) \\ & 0.25(50) + 0.125(5) \\ & 12.5 + 0.625 \\ & \text{area } a = 13.125 \end{aligned}$$

Note $a_2 = b = 0.625$ and, here $b = d = 0.625$

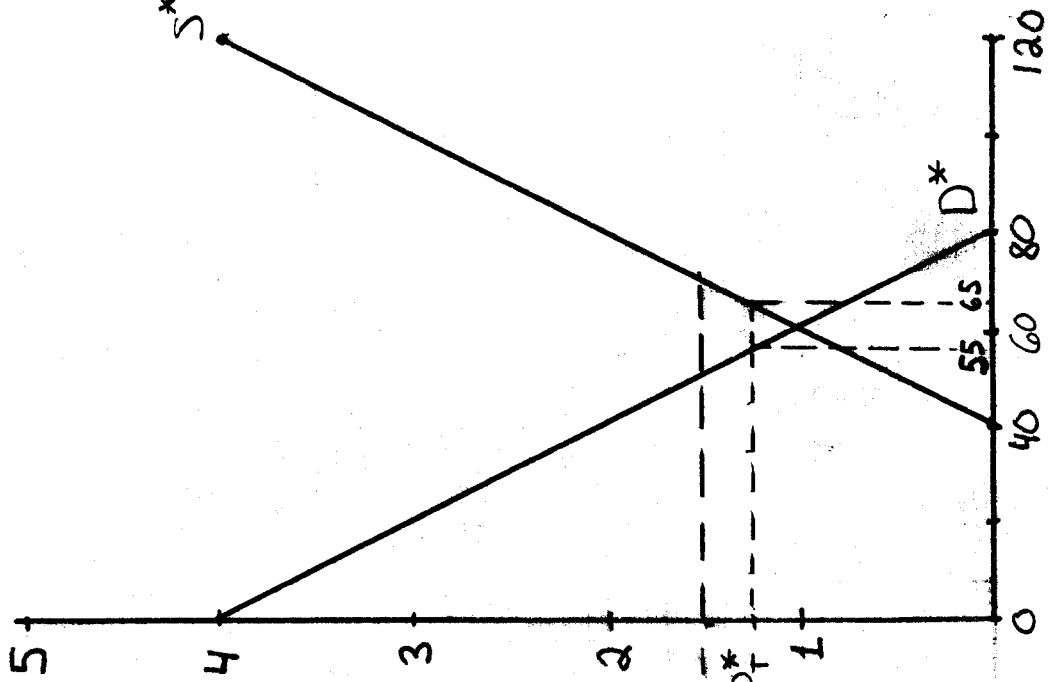
$$\text{Here } c = e = \frac{1}{2}(\text{tariff})Q_T = \frac{1}{2}(0.5)10 = 2.5$$

- (2) Consumers lose $16.875 = a + b + c + d = 13.125 + 0.625 + 2.5 + 0.625$

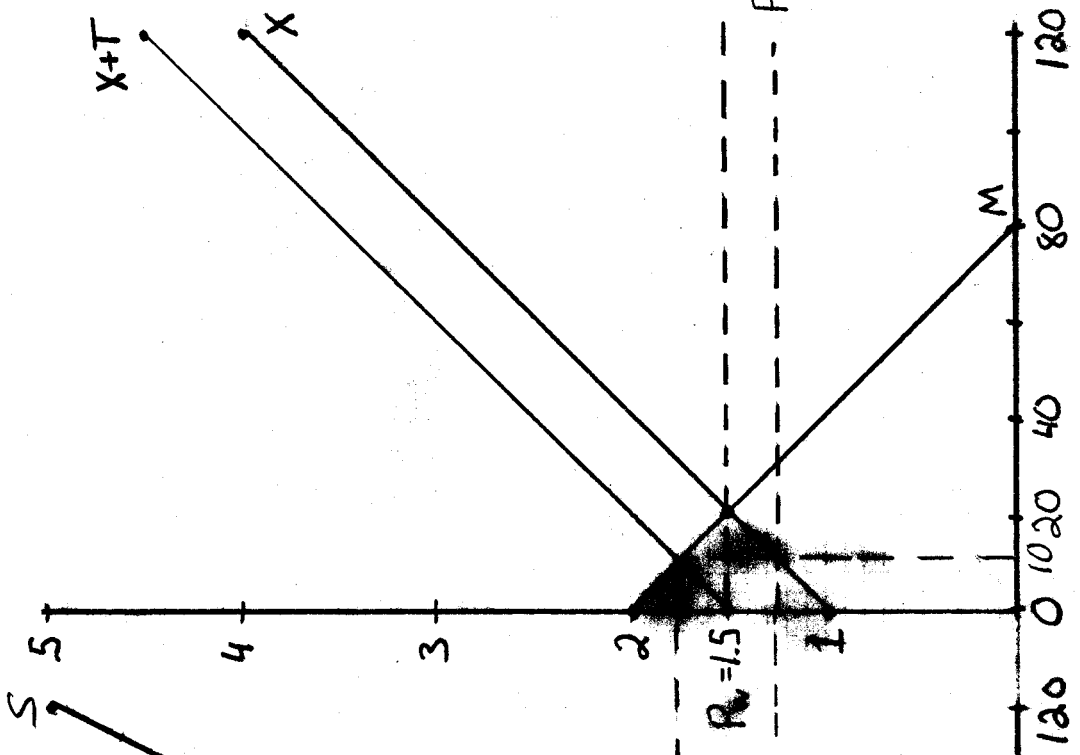
- (3) Home's gov't revenue = $c + e = 0.5(10) = 5$

c. Totgain = $e = 2.5$; efficiency loss = $b + d = 1.25$; Netgain = 1.25

Foreign



Int'l MKT



Home

