

$$u_A = u_A(x_A, y_A) \quad w_A = (w_A^X, w_A^Y)$$

$$u_B = u_B(x_B, y_B) \quad w_B = (w_B^X, w_B^Y)$$

Total endowment:  $w = w_A + w_B = (w_A^X + w_B^X, w_A^Y + w_B^Y)$

Obj: How do we efficiently allocate the 2 goods X, Y b/w the 2 consumers A, B s.t both individuals get the highest possible utility.

Q.  $u_A = x_A^{1/2} y_A^{1/2} \quad w_A = (70, 20)$

$u_B = x_B^{1/2} y_B^{1/2} \quad w_B = (30, 30)$

Draw the Edgeworth box & find the contract curve.

$$w = w_A + w_B = (70 + 30, 20 + 30) = (100, 50)$$

Total X available  
Total Y available

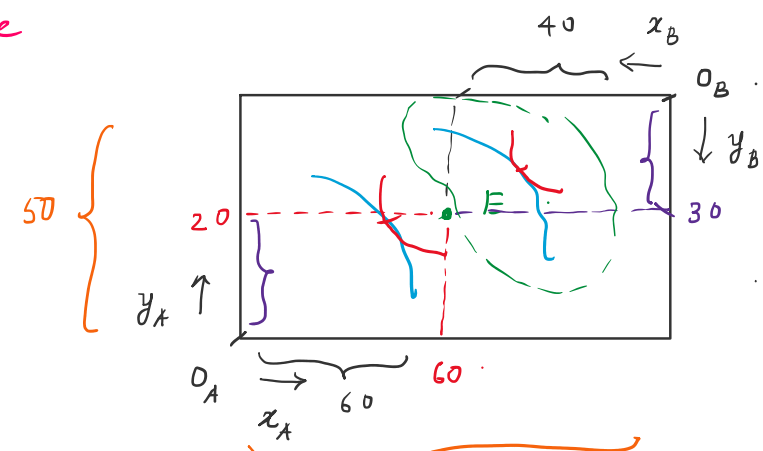
Set of Pareto opt points gives the Contract Curve.

Graphically, pt of tangency of the IC's of the 2 individuals.

∴ At pt E,

$$|\text{slope of } IC_A| = |\text{slope of } IC_B|$$

$$\boxed{MRS_A = MRS_B} \Rightarrow \text{Give the contract curve.}$$



$u = u(x, y)$   
 $MRS = \frac{MU_x}{MU_y}$   
 $= \frac{\partial u / \partial x}{\partial u / \partial y}$

$y = f(x)$