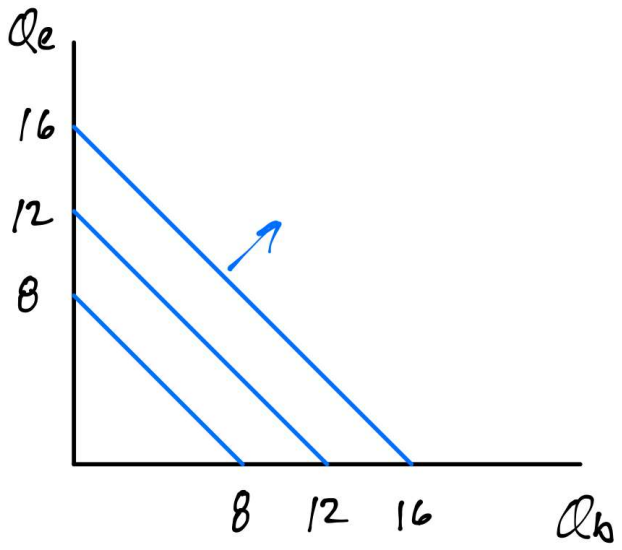
Demand for a Perfect Substitute

A second corner case; a bit more complex

Example: gas from BP or Exxon

Preferences:

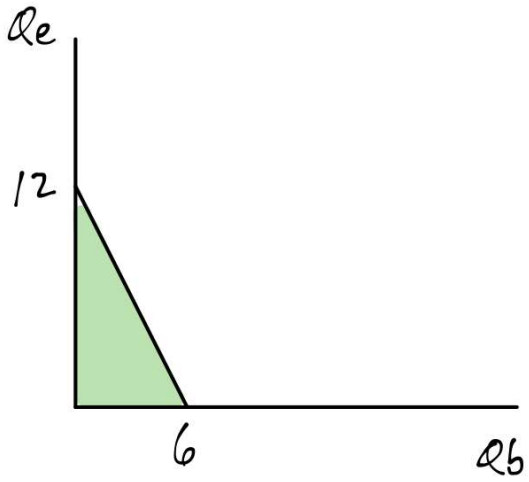
Considers goods identical: willing to trade 1 for 1
$\text{MRS} = -1$



Budget constraint:

$M = \$24$

$P_e = \$2$
$P_b = \$4$

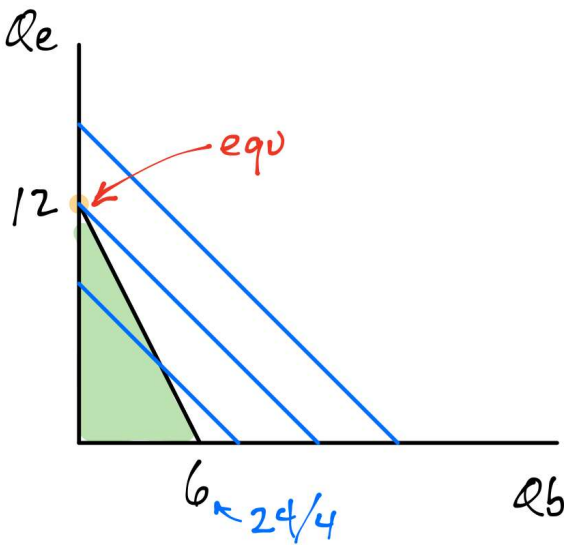


Y intercept:
24/2 = 12

X intercept:
24/4 = 6

Combining:

Initial case $P_b = \$4$

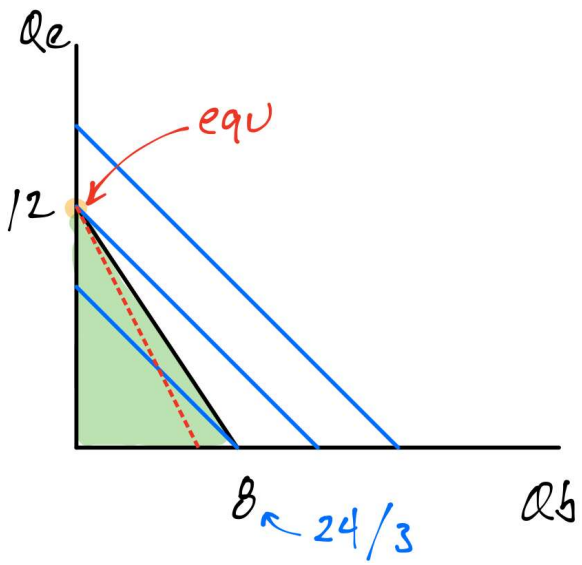


$Q_e = 12$
$Q_b = 0$

Now chart out the demand for **BP** (X axis): $Q_b(P_b)$

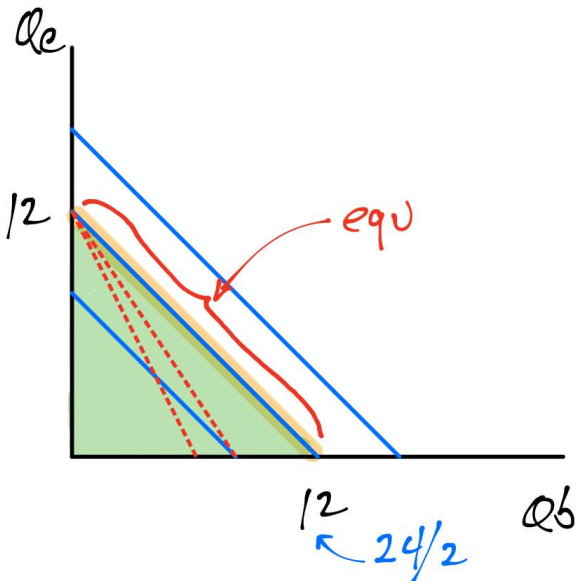
Suppose $P_b = \$3$; changes **BC** but not ICs

$Q_b = 0$

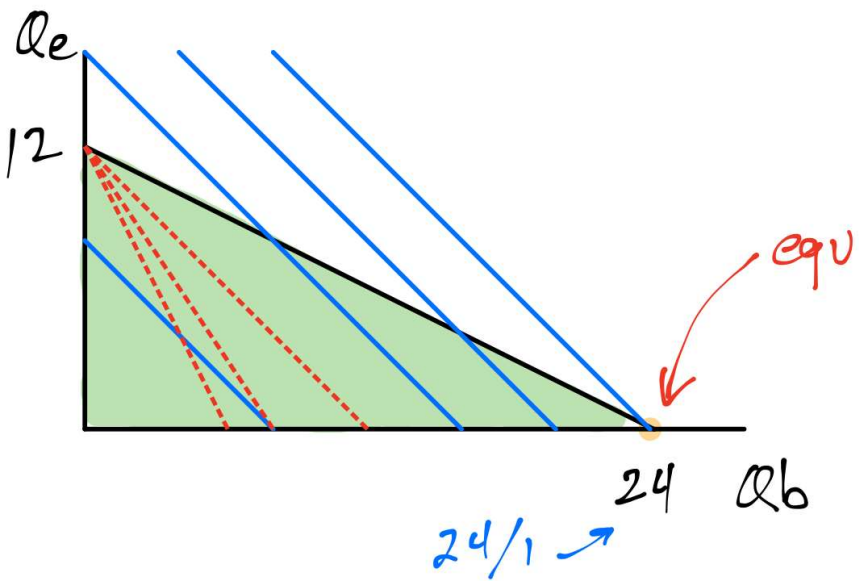


Suppose $P_b = \$2$

$Q_b \epsilon [0,12]$



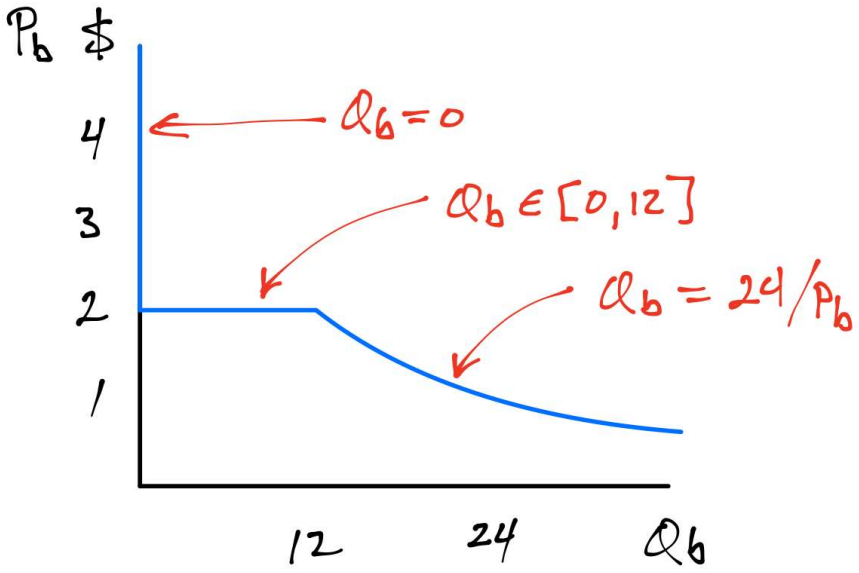
Suppose $P_b = \$1$



$$Q_b = \frac{M}{P_b}$$

$$Q_b = 24$$

Plotting the demand curve:



Has three regions; depends on P_b:

If	Then
$P_b > P_e$	$Q_b = 0$
$P_b = P_e$	$Q_b \epsilon [0,12]$
$P_b < P_e$	$Q_b = M/P_b$

Perfect substitutes preferences:

Usually all-or-nothing demands