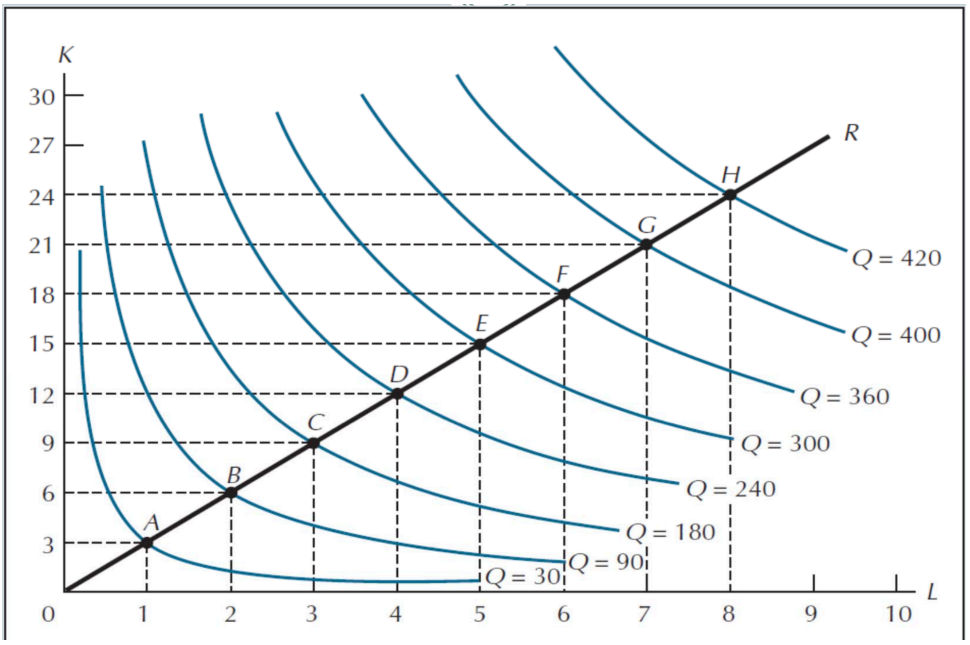
EE211 section 1 Class activity

Production in the long run

Showing Returns to Scale on the Isoquant Map

Consider the isoquant map in Figure 1. As we move outward into the isoquant map along the ray labeled R, each input grows by exactly the same proportion.

Figure 1



Show your work and define whether the production function exhibits increasing returns to scale, constant returns to scale, or decresing returns to scale

In the region A to B

Input

K from 3 to 6 $\frac{6-3}{3} \times 100 = 100\%$

L from 1 to 2 $\frac{2-1}{1} \times 100 = 100\%$

output from 30 to 90 $\frac{90-30}{30} \times 100 = 200\%$

"increasing return to scale"

In the region E to F

Input

F from 15 to 18 = $\frac{18-15}{15} \times 100 = 20\%$

L from 5 to 6 = $\frac{6-5}{5} \times 100 = 20\%$

Output from 300 to 360 = $\frac{360-300}{300} \times 100 = 20\%$

"Constant Return to Scale"

In the region G to H

Input

K from 21 to 24 = $\frac{24-21}{21} \times 100 = 14.29\%$

L from 7 to 8 = $\frac{8-7}{7} \times 100 = 14.29\%$

Output from 400 to 420 = $\frac{420-400}{400} \times 100 = 5\%$

"Decreasing Return to Scale"