An aerial photograph of a city landscape. In the foreground, there is a large green golf course with a winding path and a small pond. A multi-lane road curves through the middle of the image, intersecting with another road. The background shows a city skyline with various buildings and more green spaces. The sky is clear and blue.

Unit 2

Producer Behavior (Ch. 6)

10/7

ECON 323 – MICROECONOMIC THEORY – DR. STRICKLAND

Returns to Scale



How much does output change if a firm increases its inputs by the same proportion?

- What is the firm's **returns to scale**?

Three types:

- Constant
- Increasing
- Decreasing

CD PROD. FCN:

$$q = K^a L^b$$

$$a + b = 1 \Rightarrow \text{CONSTANT}$$

$$a + b > 1 \Rightarrow \text{INC.}$$

$$a + b < 1 \Rightarrow \text{DEC.}$$

Technological Change

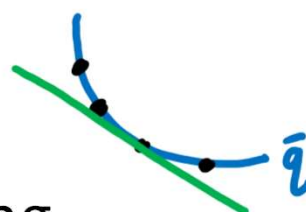


Often, output increases even when inputs do not change

- This is **total factor productivity growth**

$$q = \underline{A} f(k, L)$$

Suppose Dunder Mifflin employs 25 workers ($w = \$10/\text{hour}$) and 5 computers ($r = \$20/\text{hour}$). At these levels, the marginal product of labor (MP_L) is 25 and the marginal product of capital (MP_K) is 30. What should Dunder Mifflin do to minimize its costs of production?



$$\frac{MP_L}{w} \text{ vs. } \frac{MP_K}{r}$$

$$\frac{25}{10} \text{ vs. } \frac{30}{20}$$

$$2.5 \text{ vs. } 1.5$$

- A. Nothing – it is cost minimizing
- B. Reduce workers and computers
- ☒ C. Increase workers and decrease computers
- D. Decrease workers and increase computers