

Assume that A is constant and $A = 1$, then:

$$Y = N$$

which implies the cost of producing one more unit of output is the cost of employing one more worker at W . The marginal cost of production is equal to W .

If the firm wants to increase output Y by 1 unit, this production implies the employment needs to increase by 1 unit ($Y = N$).

The wage or cost of hiring 1 more unit of labor is W . So the marginal cost of increasing the production by 1 unit is W .

For a firm with production function $Y = N$, its revenues are PY , and P is the price of products produced by the firms. W is the wage paid to the workers and it is the marginal labor input cost, total labor cost is WN . So the profit of the firm is :

$$PY - WN$$

with $P = (1 + m)W$, the profit is:

$$PY - WN = (1 + m)WN - WN = mWN$$

If $m = 0$, the firm set the price equals the wage paid to the labor, then profit is zero.

If $m > 0$, $mWN > 0$, the firm is making profit. Since firm wants to make money, it will set the price with a markup ($m > 0$) over the wage.