1 Price Changes Holding Output Constant
The first example indicates how the optimal quantities of capital ($K^*$) and labor ($L^*$) adjust when the price of labor increases, assuming the firm wants to hold the quantity of output constant.

Step 0: Before any change in price takes place, we see that the firm has maximized profits by setting:

$$\text{MRTS} = \frac{P_L}{P_K}$$

Step 1: When the price of labor increases, the isocost line of the firm becomes steeper because the slope of this line ($-\frac{P_L}{P_K}$) becomes more negative as $P_L$ goes up.

Step 2: Faced with this higher price, the firm must once again equate $\text{MRTS}$ with $\frac{P_L}{P_K}$. However, since it wants to maintain $q=100$, it will have to spend more to achieve this output. Thus, the isocost curve shifts to the right to find the new point of tangency. The firm becomes more capital intensive.
2 Capital Becomes More Productive
The second example indicates how the optimal quantities of capital ($K^*$) and labor ($L^*$) adjust when capital becomes more productive.

Step 0: Before any change in productivity takes place, we see that the firm has maximized profits by setting:

$$MRTS = \frac{P_L}{P_K}$$

Step 1: When capital becomes more productive, the isoquant becomes flatter and everywhere lower. This “flatness” reflects the fact that it now takes more labor to substitute for each unit of capital.

Step 2: If we assume that the relative price of labor to capital does not change, then the firm can now produce the same quantity for less money. As a result, the isocost line shifts to the right to find the new point of tangency. Note that the firm becomes relatively more capital intensive.
3 What is Optimal Production in the Long Run?
In order to maximize profit, the firm sets $MRTS = P_L/P_K$, as indicated by the point $C$ in figure 1. But what does this mean? Why isn’t $A$ optimal?

Assume the firm wants to produce 100 cases of beer. At point $A$, the firm is willing to give up a lot of capital for just a little bit of labor in order to hold output constant at $q=100$. Graphically we can see this is true by looking at the slope of the isoquant at $A$: since it is relatively steep, we can say that, internally, the firm “values” labor more than capital since it can produce the same level of output by substituting lots of capital for a little bit of labor.

On the other hand, if the firm sells a lot of capital on the open market, it would get in return an almost equal amount of labor, since the slope of the isocost curve in the figure is close to -1. In other words, the market values capital in terms of labor more than the firm does. As a result, the firm can do better than point $A$ by exchanging capital for labor at market prices because it gets more labor from the market per unit of capital than it thinks it is worth internally. Making such trades allows the firm to produce at less cost. (Do you see the parallel with the maximizing utility?)

In fact, the firm will keep trading in the market until it reaches point $C$, where its internal labor to capital price, represented by the MRTS, equals the external labor to capital price, represented by the slope of the isocost line ($P_L/P_K$).

If the firm were to consider trading after point $C$, say at point $B$, it would get less labor per unit of capital than would be necessary to maintain constant production.