

The following table shows the input-output relationships in a firm. The firm uses robots and workers to produce output. The number of robots used is fixed in the short run. For example, suppose that currently the firm is using 4 robots and 36 workers producing 12 units of output. If the firm decides to produce 24 units of output, it cannot increase the number of robots in the short run. Therefore it has to hire 144 workers to produce that quantity of output. In the long run, though, it can buy and use additional robots.

You can see that robots and workers are substitute inputs: for any given level of output produced, the larger the number of robots the firm uses, the smaller is the number of workers needed. The wage rate is \$1,200 per worker per production period. The cost of capital is \$3,600 per robot per production period.

In SmartSite, enter your answers with no dollar signs, commas, or decimal places (unless otherwise stated).

Quantity of Output Produced	Number of Robots	Number of Workers	Number of Robots	Number of Workers	Number of Robots	Number of Workers
12	4	36	16	9	36	4
24	4	144	16	36	36	16
36	4	324	16	81	36	36
48	4	576	16	144	36	64