



# Production and Cost - Practice Problem

Suppose a farmer has 10 acres of land that he rents for \$10 per acre. Suppose he pays his laborers \$10 each. His production function is provided in the table below by the relationship between L and Q.

- Complete the table.
- Graph the production function.
- Graph the total cost curve
- Graph the ATC, AVC, AFC, and MC.

<u>K</u>	<u>L</u>	<u>Q</u>	<u>MP<sub>L</sub></u>	<u>FC</u>	<u>VC</u>	<u>TC</u>	<u>MC</u>	<u>AFC</u>	<u>AVC</u>	<u>ATC</u>
<u>10</u>	<u>0</u>	<u>0</u>		<u>100</u>	<u>0</u>	<u>100</u>		<u>--</u>	<u>--</u>	<u>--</u>
—			<u>2</u>	—	—	—	<u>5</u>		—	
<u>10</u>	<u>3</u>	<u>6</u>		<u>100</u>	<u>30</u>	<u>130</u>		<u>16.7</u>	<u>5</u>	<u>21.7</u>
—			<u>4</u>	—	—	—	<u>2.5</u>	—	—	—
<u>10</u>	<u>5</u>	<u>14</u>		<u>100</u>	<u>50</u>	<u>150</u>		<u>7.1</u>	<u>3.6</u>	<u>10.7</u>
—			<u>3</u>	—	—	—	<u>3.3</u>	—	—	—
<u>10</u>	<u>8</u>	<u>23</u>		<u>100</u>	<u>80</u>	<u>180</u>		<u>4.3</u>	<u>3.5</u>	<u>7.8</u>
—			<u>2</u>	—	—	—	<u>5</u>	—	—	—
<u>10</u>	<u>12</u>	<u>31</u>		<u>100</u>	<u>120</u>	<u>220</u>		<u>3.2</u>	<u>3.9</u>	<u>7.1</u>
—			<u>1</u>	—	—	—	<u>10</u>	—	—	—
<u>10</u>	<u>17</u>	<u>36</u>		<u>100</u>	<u>170</u>	<u>270</u>		<u>2.8</u>	<u>4.7</u>	<u>7.5</u>
—			<u>0.4</u>	—	—	—	<u>25</u>	—	—	—
<u>10</u>	<u>22</u>	<u>38</u>		<u>100</u>	<u>220</u>	<u>320</u>		<u>2.6</u>	<u>5.8</u>	<u>8.4</u>
—				—	—	—		—	—	—

