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|  * Bottom of Form

A firm’s product sells for $4 per unit in a highly competitive market. The firm produces output using capital (which it rents at $ 25 per hour) and labor (which is paid a wage of $30 per hour under a contract for 20 hours of labor services). Complete the following table and use that information to answer the questions that follow.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| K | L | Q | MPK | APK | APL | VMPK |  |
| 0 | 20 | 0 |  |  |  |  |  |
| 1 | 20 | 50 |  |  |  |  |  |
| 2 | 20 | 150 |  |  |  |  |  |
| 3 | 20 | 300 |  |  |  |  |  |
| 4 | 20 | 400 |  |  |  |  |  |
| 5 | 20 | 450 |  |  |  |  |  |
| 6 | 20 | 475 |  |  |  |  |  |
| 7 | 20 | 475 |  |  |  |  |  |
| 8 | 20 | 450 |  |  |  |  |  |
| 9 | 20 | 400 |  |  |  |  |  |
| 10 | 20 | 300 |  |  |  |  |  |
| 11 | 20 | 150 |  |  |  |  |  |

1. Identify the fixed and variable inputs.
2. What are the firm’s fixed costs?
3. What is the variable cost of producing 475 units of output?
4. How many units of the variable input should be used to maximize profits?
5. What are the maximum profits this firm can earn?
6. Over what range of the variable input usage do increasing marginal returns exist?
7. Over what range of the variable input usage do decreasing marginal returns exist?
8. Over what range of input usage do negative marginal returns exist?

***Home Assignment/Drop Box Instructions:***Homework is due in the weekly Drop Box by Saturday 5pm.Send homework as a Word attachment or copy and paste in the Drop Box |
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