**A2 Economics Unit 3 – Costs of Production**

**Definitions:**

Average Fixed Costs:

* Total fixed costs divided by the number produced.

Average Variable Costs:

* Total variable costs divided by the number produced.

Average Total Costs:

* Total cost divided by the number produced.

Marginal Cost:

* The cost of the extra unit of output.

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Qty / Output** | **Total Fixed Costs (TFC)** | **Total Variable Costs (TVC)** | **Total Costs (FC+VC)** | **Average Fixed Costs (AFC)** | **Average Variable Costs (AVC)** | **Average Total Costs (ATC)** | **Marginal Costs (MC)** |
| **0** | 180 | 0 | 180 | 0 | 0 | 0 | 0 |
| **1** | 180 | 15 | 195 | 180 | 15 | 195 | 195 |
| **2** | 180 | 50 | 230 | 90 | 25 | 115 | 35 |
| **3** | 180 | 225 | 405 | 60 | 75 | 135 | 175 |
| **4** | 180 | 300 | 480 | 45 | 75 | 120 | 75 |
| **5** | 180 | 465 | 645 | 36 | 93 | 129 | 165 |
| **6** | 180 | 648 | 828 | 30 | 108 | 138 | 183 |
| **7** | 180 | 891 | 1071 | 26 | 127 | 153 | 243 |
| **8** | 180 | 1260 | 1440 | 23 | 158 | 180 | 369 |
| **9** | 180 | 1710 | 1890 | 20 | 190 | 210 | 450 |

**Activity:**

1. **Calculate the firms costs and complete the table.**
2. **Plot the average and marginal cost curves on graph paper. (plot the marginal values midway between the units of output 0.5 to 5.5.**
3. **At what level of output is the firm productively efficient?**
4. **Explain why productive efficiency occurs at this level of output.**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Qty / Output** | **Total Fixed Costs (TFC)** | **Total Variable Costs (TVC)** | **Total Costs (FC+VC)** | **Average Fixed Costs (AFC)** | **Average Variable Costs (AVC)** | **Average Total Costs (ATC)** | **Marginal Costs (MC)** |
| **0** | 70 |  | 70 |  | 0 |  |  |
|  |  |  |  |  |  |  |  |
| **1** | 70 | 120 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **2** | 70 | 150 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **3** | 70 | 175 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **4** | 70 | 222 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **5** | 70 | 295 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |
| **6** | 70 | 400 |  |  |  |  |  |
|  |  |  |  |  |  |  |  |