**Production Costs and Revenue**

Swing to Hit Ltd manufactures high quality Baseball bats for Major League Baseball stars. The company is based in Scranton, Pennsylvania. Here are the main fixed and variable costs (FC and VC) of production for the Firm:



|  |  |
| --- | --- |
| Fixed and Variable Inputs | $ (dollars) |
| Rent | 50,000 pa |
| Business rates |  5,000 pa |
| Other fixed costs | 25,000 pa |
| Wood |  30 per bat |
| Other raw materials |  10 per bat |
| Labour |  50 per bat |
| Other variable costs |  10 per bat |
|  |  |

1. In 2018, Swing to Hit Ltd produced 4,800 bats. Calculate the total cost (TC) of production. Showing your working out:

TC=FC +VC

FC Total:

 +

VC Total:

= Total Costs of $……………………..

1. Advise the managing director and financial director on a suggested retail price for the baseball bat and explain your answer\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. The firm has recently gained some excellent media exposure following a world series appearance by Swing to Hit endorsed star ‘Slugger Doubleday’. You have been asked by the financial director of the company to work out the Average Cost (AC) of a baseball bat given the following possible levels of production over the coming year.

|  |
| --- |
| 2000 bats |
| 3000 bats |
| 5000 bats |
| 7000 bats |
| 10 000 bats |

Plot the Average cost per cricket bat on the graph below (Average Cost is the Total Cost of output divided by the Total amount of output):



1. Your advice was so successfully received back in 2018 (Question 2) that the managing director has asked you to suggest a price for the bat in 2019, given the possible levels of demand created by the media exposure\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. Given the price level you suggested in Question 4 work out your total revenue (TR = Price x quantity sold) using the following sales forecasts in the table below:

|  |  |  |
| --- | --- | --- |
| Quantity sold | Price | Total Revenue (TR) |
| 2000 bats |  |  |
| 3000 bats |  |  |
| 5000 bats |  |  |
| 7000 bats |  |  |
| 10 000 bats |  |  |

1. Now using your calculations from Question 5 and calculating the total costs at each level of output, work out the Profit and Loss for bats given forecast demand (D) at the following levels:

|  |  |  |  |
| --- | --- | --- | --- |
| Quantity  | Total revenue | Total costs | Profit or Loss +/- |
| 2000 bats |  |  |  |
| 3000 bats |  |  |  |
| 5000 bats |  |  |  |
| 7000 bats |  |  |  |
| 10 000 bats |  |  |  |

1. Finally using the data from the table in question 6 construct a profit and loss diagram (like the one on page 239) for the bat for different levels of output. Shade the area of loss and the area of profit. Label the break-even point. At what level of production does the firm begin to make profit?