

Answer on Question #44110 – Economics – Microeconomics

The amount of fish caught per week on a trawler is a function of the crew size assigned to operate the boat. Based on past data, the following production schedule was developed:

CRRW SIZE(Number of workers) Amount of Fish caught per week(Hundreds of LBS).

How large a crew should be used if the trawler owner is interested in maximising the total amount of fish caught?

Solution

N, workers	Q, hundreds of LBS	MP, hundreds of LBS
2	3	-
3	6	3
4	11	5
5	19	8
6	24	5
7	28	4
8	31	3
9	33	2
10	34	1
11	34	0
12	33	-1

Marginal product (MP) of an input is the extra output that can be produced by using one more unit of the input (for instance, the difference in output when a firm's labor usage is increased from five to six units), assuming that the quantities of no other inputs to production change.

Total output is maximized, when $MR > 0$, before it becomes zero or negative, so 10 workers should be used if the trawler owner is interested in maximising the total amount of fish caught.