A workshop has the ability to turn three pieces into four types of lathes, the production time (in minutes) by different machines is as follows:

**Table 1.1 Production time of parts by lathes**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lathe machine  Parts | 1 | 2 | 3 | 4 |
| 1 | 5 | 7 | 4 | 10 |
| 2 | 6 | 12 | 8 | 15 |
| 3 | 13 | 4 | 9 | 17 |

Since the production time of a piece is different by different lathes, the profit of each production piece will also be different depending on which lathe is used to produce it. Table 3-4 shows the profit of each product unit. If the amount of work is considered to be 44 hours per week and the minimum amount of production of three pieces is 100, 150 and 100 pieces of each piece, by which machine and how many should be produced in order to maximize the profit of the workshop.

**Table 1.2 Profit per piece produced by machines**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Lathe machine  Parts | 1 | 2 | 3 | 4 |
| 1 | 10 | 8 | 6 | 9 |
| 2 | 18 | 20 | 15 | 17 |
| 3 | 15 | 16 | 13 | 17 |