Name Date

Enrichment and Extension

2.4

The Zweezam Factory

The Zweezam Factory manufactures Zweenubs, Zweedulls, and Zweebuds.

The table shows the costs and income for each type of item.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Zweenubs | Zweedulls | Zweebuds |
| Cost per item manufactured | $2.53 | $6.58 | $8.72 |
| Income per item sold | $4.50 | $8.89 | $9.99 |

Answer the following questions about this week at the Zweezam Factory.

 1. This week the Zweezam Factory manufactured 46 items altogether including
24 Zweenubs. They manufactured two-thirds as many Zweedulls as Zweenubs
and one-fourth as many Zweebuds as Zweenubs. How many of each type did
the factory manufacture?

 2. What is the factory’s total manufacturing cost?

 3. Also this week, the Zweezam Factory sold 32 parts altogether including
10 Zweedulls. They sold half as many Zweedulls as Zweenubs and one-fifth
as many Zweebuds as Zweedulls. How many of each type did the factory sell?

 4. What is the factory’s total income?

 5. What was the Zweezam Factory’s profit this week?
(*Hint:* )

 6. If the Zweezam Factory continues to manufacture and sell the same number of items for four more weeks, what will be the total profit for five weeks?

 7. The Zweezam Factory plans to manufacture fewer items next week. They will manufacture 40 items altogether: two-fifths as many Zweedulls as Zweenubs and
one-half as many Zweebuds as Zweedulls. If the Zweezam Factory manufactured
5 Zweebuds, how many of each type will the Zweezam Factory manufacture?

 8. They already have pre-orders for next week’s batch: 12 Zweenubs, 5 Zweedulls, and 1 Zweebud. Each week the parts must be thrown out, and only the new batch can be sold. So, how much more income do they have to make in order to break even (i.e. have a profit of zero) next week? What is the most profit they could
earn next week?

 9. If they sold Zweenubs only next week, could they make enough income to break even? Explain your reasoning.