# Multiply 3-digits by 2-digits

## Reasoning and Problem Solving

$22 \times 111 = 2442$

$23 \times 111 = 2553$

$24 \times 111 = 2664$

What do you think the answer to $25 \times 111$ will be?

What do you notice?

Does this always work?

The pattern stops at up to $28 \times 111$ because exchanges need to take place in the addition step.

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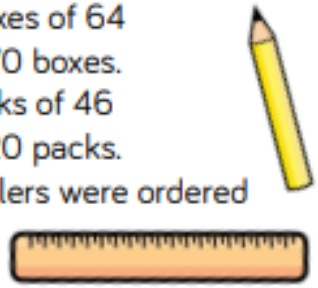
Pencils come in boxes of 64
A school bought 270 boxes.
Rulers come in packs of 46
A school bought 720 packs.
How many more rulers were ordered than pencils?



15,840

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Here are examples of Dexter's maths work.

| | | | | | |
|---|---|---|---|---|---|
| | | | 9 | 8 | 7 |
| × | | | | 7 | 6 |
| | | 5 | 5 9 | 4 2 | 2 |
| | | 6 | 6 9 | 4 0 | 9 |
| | 1 | 1 2 | 8 | 1 3 | 1 |

| | | | | | |
|---|---|---|---|---|---|
| | | | 3 | 2 | 4 |
| × | | | | 7 | 8 |
| | | 2 | 1 5 | 3 9 | 2 |
| | 2 | 1 2 | 2 6 | 8 | 0 |
| | | | 3 | 2 | 7 | 2 |

He has made a mistake in each question.

Can you spot it and explain why it's wrong?

Correct each calculation.

In his first calculation, Dexter has forgotten to use a zero when multiplying by 7 tens.
It should have been $987 \times 76 = 75{,}012$

In the second calculation, Dexter has not included his final exchanges.
$324 \times 8 = \underline{2},592$
$324 \times 70 = \underline{2}2{,}680$
The final answer should have been 25,272