

Multiply 4 Digits by 2 Digits

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1a. Dennis is thinking of a number. He gives the following clues:



It is an even 5-digit number.
It is the result of multiplying a 4-digit number by 12.
The 4-digit number has a digit sum of 5.

What is the smallest number Dennis could be thinking of?



PS

1b. Jen is thinking of a number. She gives the following clues:



It is an odd 5-digit number.
It is the result of multiplying a 4-digit number by 21.
The 4-digit number has a digit sum of 4.

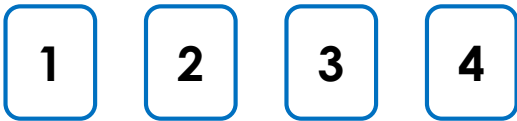
What is the smallest number Jen could be thinking of?



PS

2a. Use two of the digit cards to create a multiplication that equals approximately 25,000.

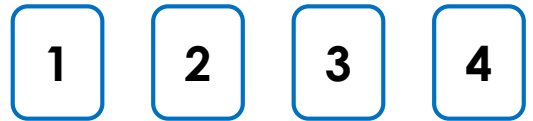
2,124 x _____



PS

2b. Use two of the digit cards to create a multiplication that equals approximately 16,000.

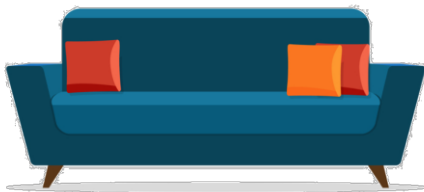
1,213 x _____



PS

3a. A sofa costs £1,213.

12 families buy a sofa each. The furniture salesperson says the total cost is £15,556.



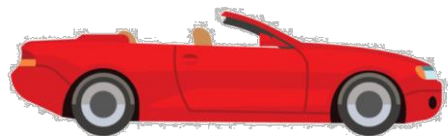
Is he correct? Explain your answer.



R

3b. A car costs £3,422.

11 families buy a car each. The car salesperson says the total cost is £37,642.



Is she correct? Explain your answer.



R

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4a. Saaim is thinking of a number. He gives the following clues:



It is an even 5-digit number.
It is the result of multiplying a 4-digit number by 23.
The 4-digit number has a digit sum of 7.

What is the largest number Saaim could be thinking of?



PS

4b. Chloe is thinking of a number. She gives the following clues:



It is an odd 6-digit number.
It is the result of multiplying a 4-digit number by 51.
The 4-digit number has a digit sum of 4.

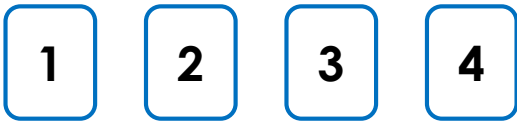
What is the smallest number Chloe could be thinking of?



PS

5a. Use two of the digit cards to create a multiplication that equals approximately 17,000.

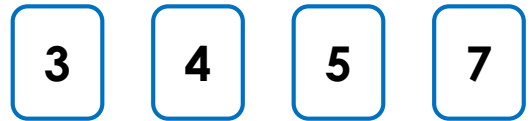
$$1,422 \quad \times \quad \underline{\hspace{2cm}}$$



PS

5b. Use two of the digit cards to create a multiplication that equals approximately 100,000.

$$2,112 \quad \times \quad \underline{\hspace{2cm}}$$



PS

6a. A TV package costs £1,419 per house.

23 houses on Brook Street buy this package. The TV salesperson says the total cost is £32,607.



Is he correct? Explain your answer.



R

6b. A new kitchen costs £3,006 per house.

13 houses on Mitchell Terrace buy a new kitchen. The builder says the total cost is £39,068.



Is she correct? Explain your answer.



R

Multiply 4 Digits by 2 Digits

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7a. Honey is thinking of a number. She gives the following clues:



It is an odd 6-digit number between 200,000 and 220,000. It is the result of multiplying a 4-digit number by 51. The 4-digit number has a digit sum of 7.

Which numbers could Honey be thinking of?



PS

7b. Igor is thinking of a number. He gives the following clues:



It is an even 6-digit number between 112,000 and 113,000. It is the result of multiplying a 4-digit number by 22. The 4-digit number has a digit sum of 8.

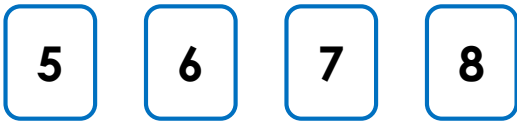
Which numbers could Igor be thinking of?



PS

8a. Use three of the digit cards to create a multiplication that equals approximately 482,000.

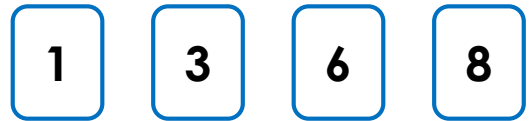
$$7,19 \square \times \square \square$$



PS

8b. Use three of the digit cards to create a multiplication that equals approximately 145,000.

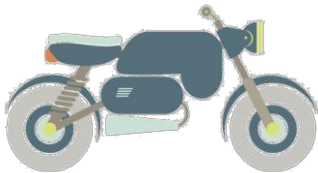
$$2,13 \square \times \square \square$$



PS

9a. A motorbike costs £6,259.

The motorbike sales person says he would need to sell between 80 and 85 motorbikes to reach his target of £600,000.



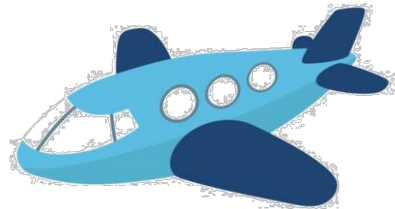
Is he correct? Explain your answer.



R

9b. Holidays to New Zealand cost £4,729.

The travel company says they would need to sell between 40 and 45 flights to reach their target of £200,000.



Are they correct? Explain your answer?



R

Reasoning and Problem Solving Multiply 4 Digits by 2 Digits

Developing

1a. The smallest number Dennis could be thinking of is 1,004. $1,004 \times 12 = 12,048$ so Dennis's 5-digit number is 12,048.

2a. $2,124 \times 12 = 25,488$

3a. No, he is not correct because $\pounds 1,213 \times 12 = \pounds 14,556$.

Expected

4a. The largest number Saaim could be thinking of is 4,300. $4,300 \times 23 = 98,900$ so Saaim's 5-digit number is 98,900.

5a. $1,422 \times 12 = 17,064$

6a. No, he is not correct because $\pounds 1,419 \times 23 = \pounds 32,637$.

Greater Depth

7a. $4,201 \times 51 = 214,251$;

$4,021 \times 51 = 205,071$; $4,111 \times 51 = 209,661$;
 $4,003 \times 51 = 204,153$

8a. $7,198 \times 67 = 482,266$;

$7,195 \times 67 = 482,065$

9a. No, he is not correct because $\pounds 6,259 \times 85 = \pounds 532,015$ which does not reach the target. He would need to sell at least 96 motorbikes.

Reasoning and Problem Solving Multiply 4 Digits by 2 Digits

Developing

1b. The smallest number Jen could be thinking of is 1,003. $1,003 \times 21 = 21,063$ so Jen's 5-digit number is 21,063.

2b. $1,213 \times 13 = 15,769$

3b. Yes, she is correct because $\pounds 3,422 \times 11 = \pounds 37,642$.

Expected

4b. The smallest number Chloe could be thinking of is 2,011. $2,011 \times 51 = 102,561$ so Chloe's 6-digit number is 102,561.

5b. $2,112 \times 47 = 99,264$

6b. No, she is not correct because $\pounds 3,006 \times 13 = \pounds 39,078$.

Greater Depth

7b. $5,102 \times 22 = 112,244$;

$5,111 \times 22 = 112,442$; $5,120 \times 22 = 112,640$

8b. $2,131 \times 68 = 144,908$;

$2,133 \times 68 = 145,044$

9b. No they are not correct because they would need to sell at least 43 flights to reach the target as $\pounds 4,729 \times 43 = \pounds 203,347$.