

Mathematics

Associativity

Mr Coward



Try this

Fill in the blanks in the calculation below using positive integers.

$$24 = \square \times \square \times \square$$

Find all possible answers.

How do you know when you have all possibilities?

How many possibilities are there if non-integers were allowed?



Independent task

1) Sally uses 48 cubes to make a cuboid.

She breaks up the cuboid in four different ways.

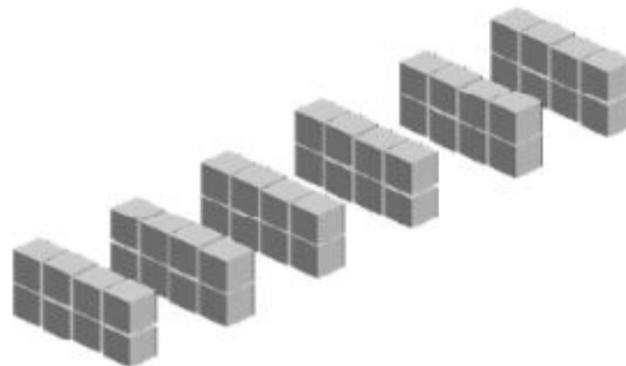
For each image, copy and complete the corresponding calculation.



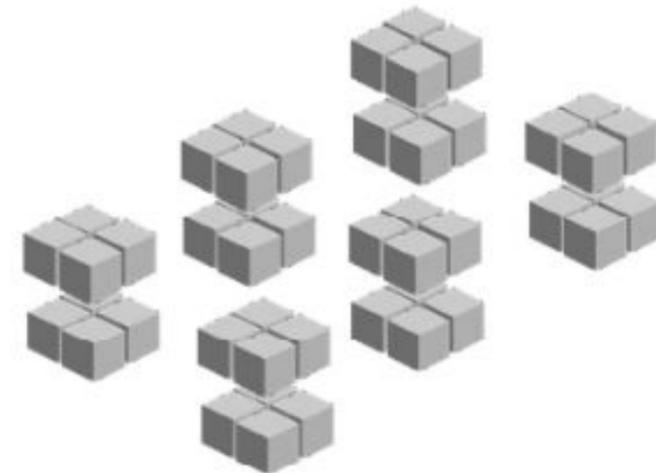
$$2 \times (_ \times _)$$



$$4 \times (_ \times _)$$



$$_ \times (4 \times _)$$



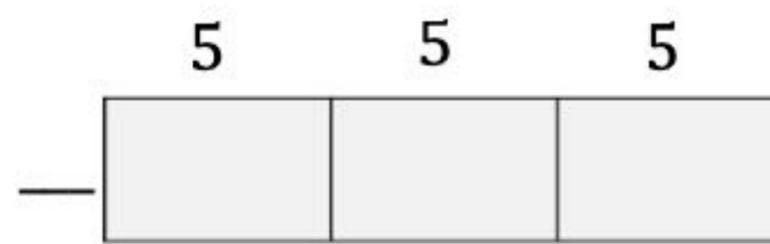
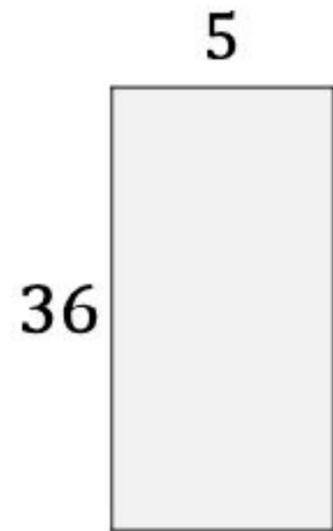
$$_ \times (_ \times _)$$



Independent task

2) Complete the calculations to match the diagrams:

$$5 \times 36 = 5 \times (_ \times 12) = (5 \times _) \times 12 = _ \times 12$$



Independent task

3) Complete the calculations:

a) $16 \times 5 = (8 \times \underline{\quad}) \times 5 = 8 \times (\underline{\quad} \times 5) = 8 \times \underline{\quad} = \underline{\quad}$

b) $16 \times 35 = 16 \times (5 \times \underline{\quad}) = (16 \times \underline{\quad}) \times \underline{\quad} = \underline{\quad} \times \underline{\quad} = \underline{\quad}$

c) $25 \times 6 = 25 \times (\underline{\quad} \times 3) = (25 \times \underline{\quad}) \times 3 = \underline{\quad} \times 3 = \underline{\quad}$

d) $25 \times 12 = 25 \times (\underline{\quad} \times \underline{\quad}) = (25 \times \underline{\quad}) \times \underline{\quad} = \underline{\quad} \times \underline{\quad} = \underline{\quad}$



Explore

Which of these calculations could be transformed to $100 \times a$ where a is an integer

12×50

25×20

10×15

12×20

4×75

40×15

What must be true for a calculation to be simplified to the form $100 \times a$?

