

Mathematics

To calculate multiplication facts using the distributive law.

Miss Thomas



OAK
NATIONAL
ACADEMY

Lesson agenda

Partitioning arrays to solve multiplication equations.



Let's explore



Partitioning area models to solve multiplication equations.

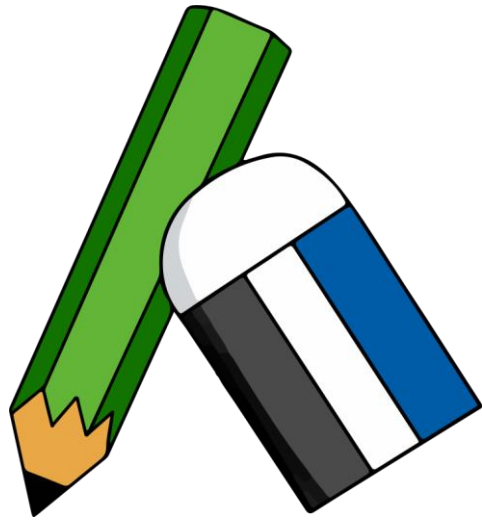


End of lesson quiz



You will need...

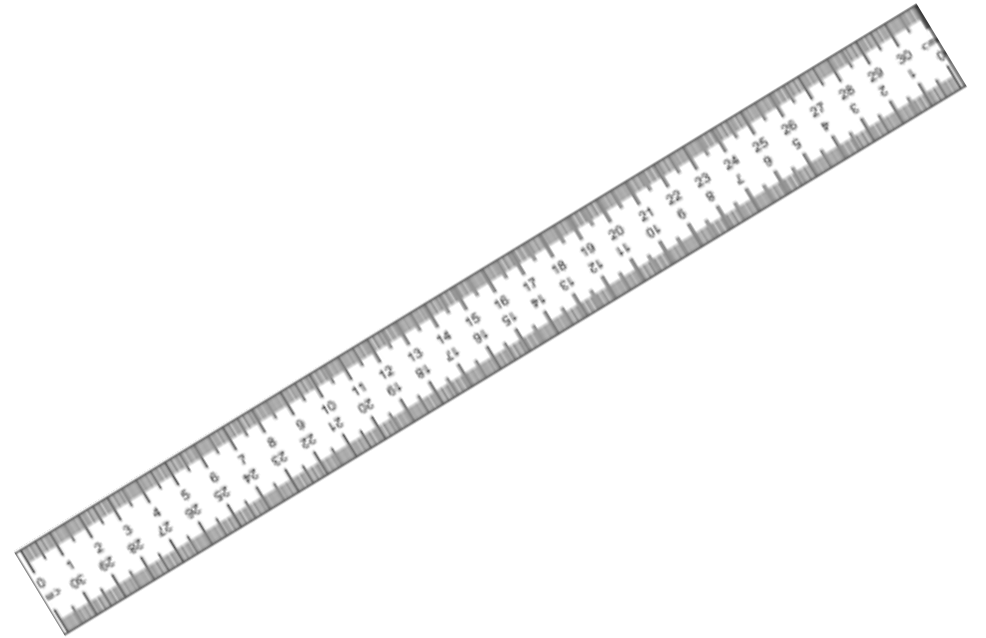
Item 1



Item 2



Item 3

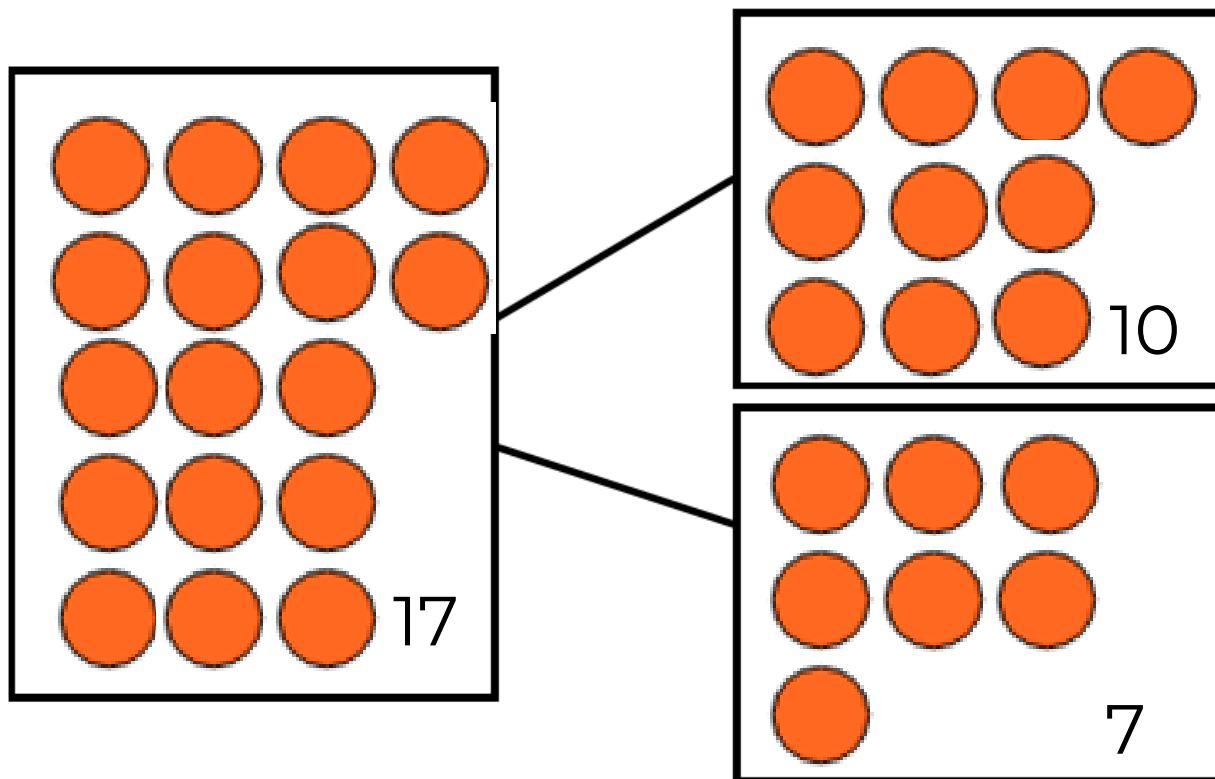




Partitioning: to separate parts of a whole.

Partitioning numbers

If the whole is 17, what could the parts be?



$$17 = 1 + 16$$

$$17 = 2 + 15$$

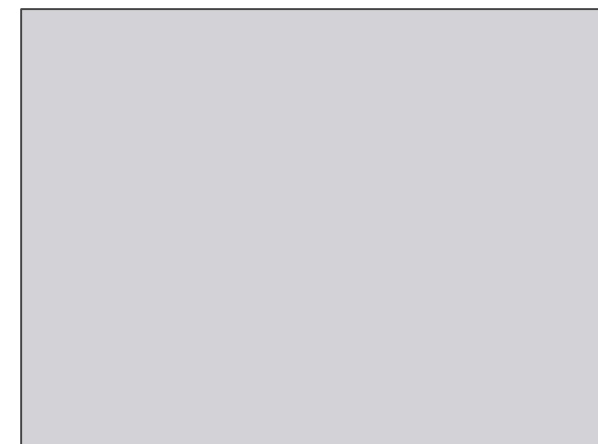
$$17 = 3 + 14$$

$$17 = 4 + 13$$

$$17 = 5 + 12$$

$$17 = 6 + 11$$

$$17 = 7 + 10$$



What could Nina do to solve her problem?

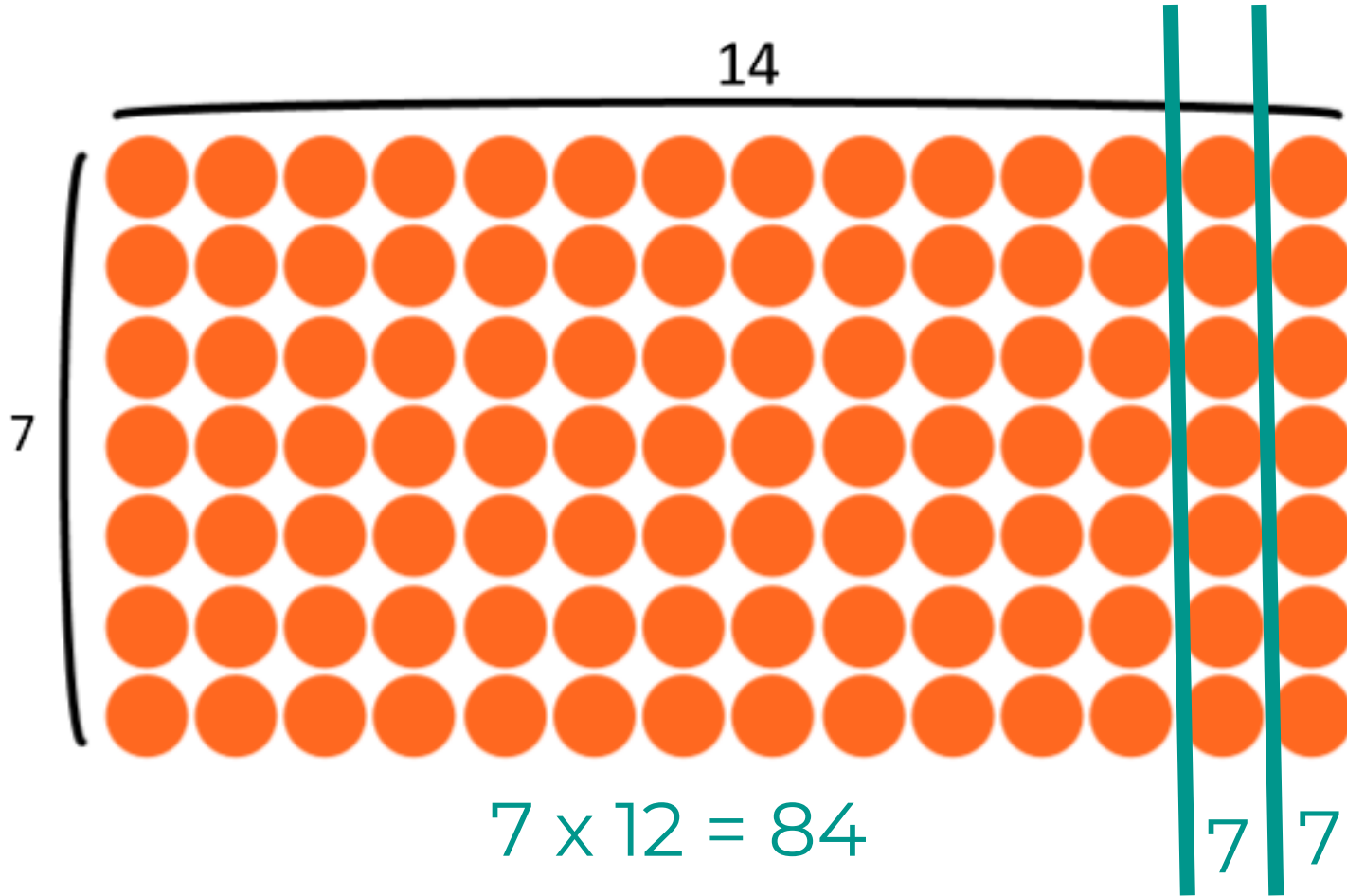


I need to multiply 7×14
but I only know my seven
times table up to 7×12 !





Distributive law: to get the same answer when parts are solved separately.



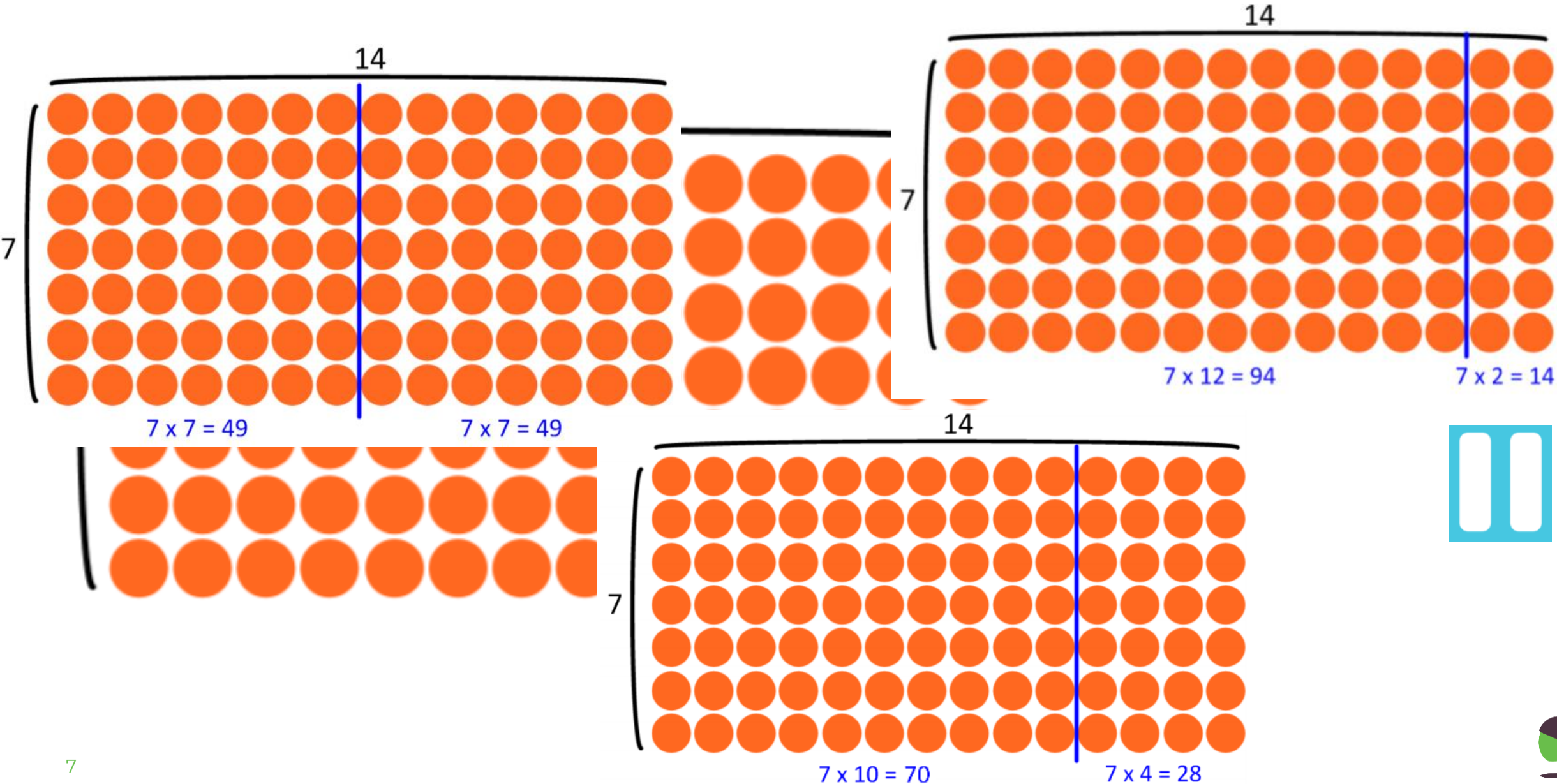
$$7 \times 12 = 84$$

$$84 + 7 = 91$$

$$91 + 7 = 98$$

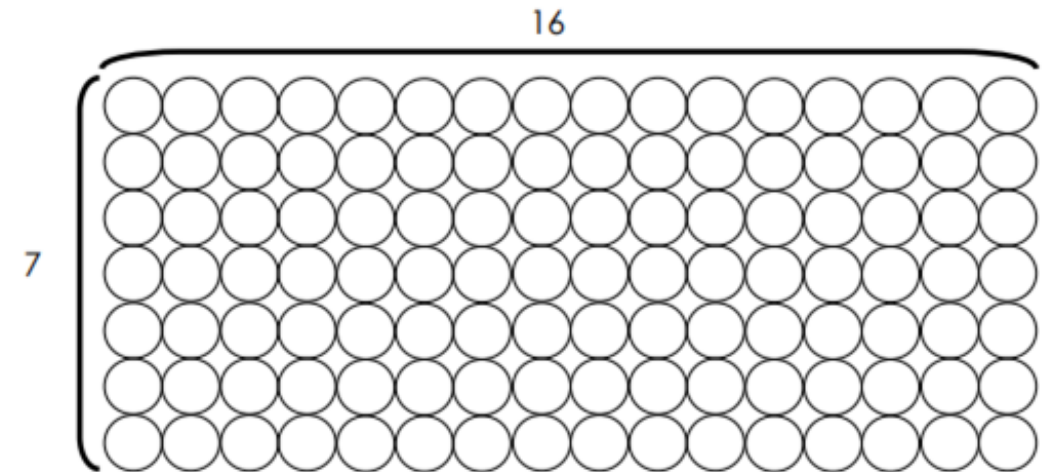
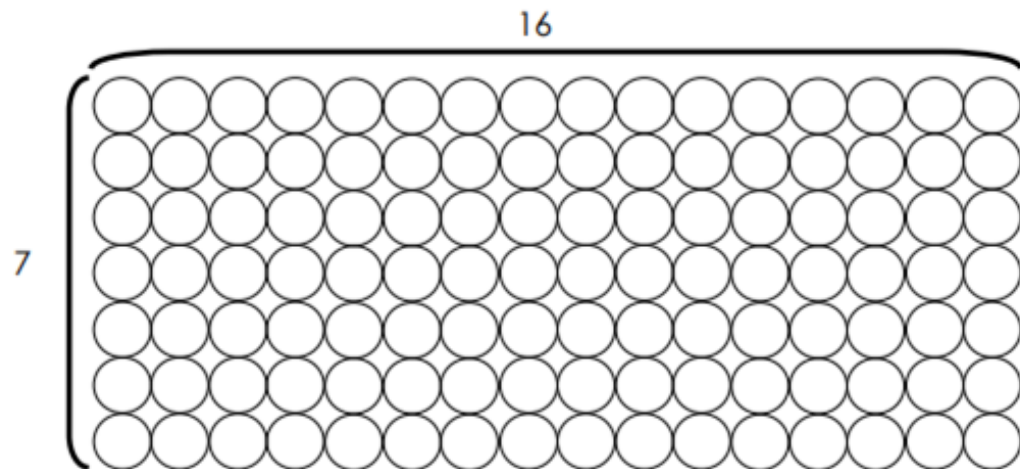
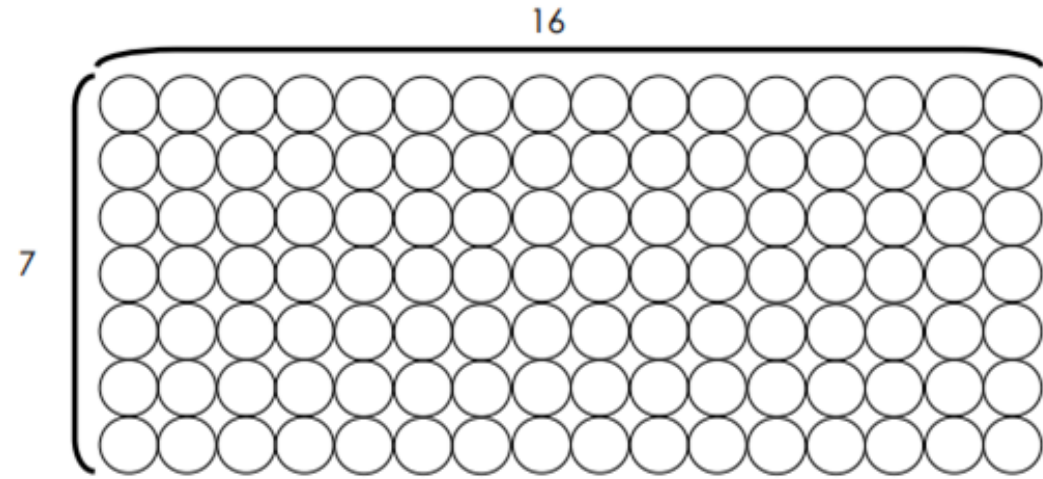
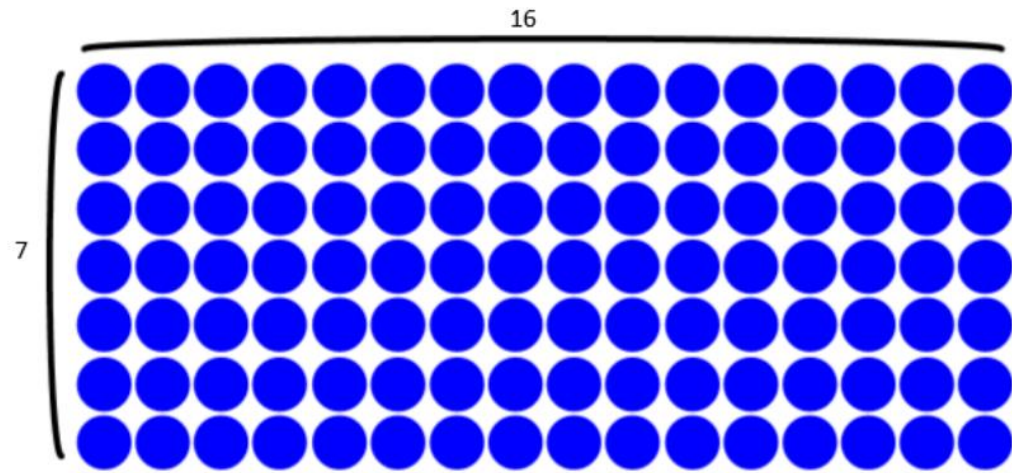


How else might 7×14 be calculated?



Let's explore

How could you calculate 7×16 using known facts?



**Pause the video to
complete your task**



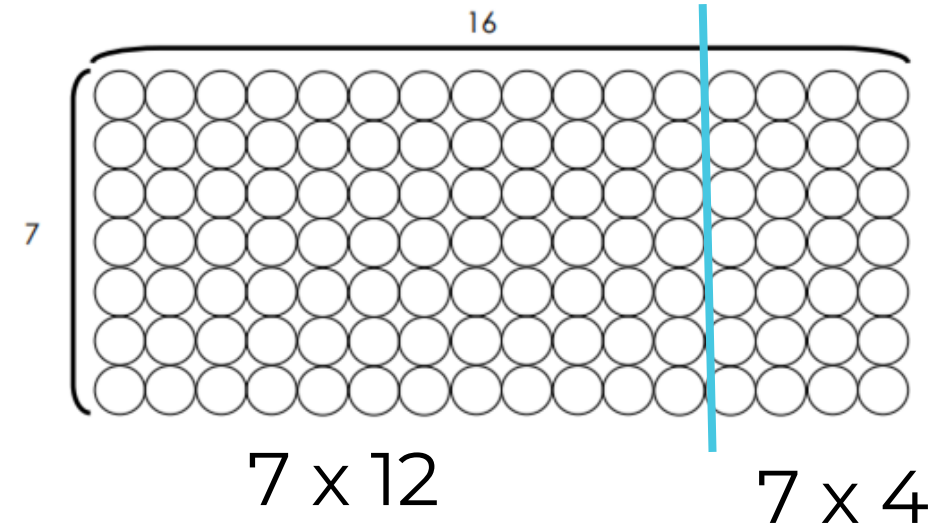
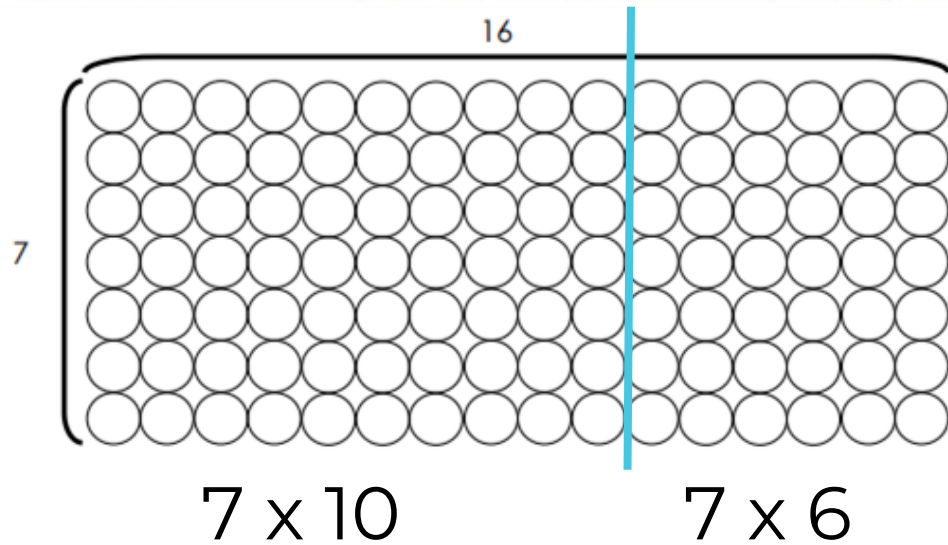
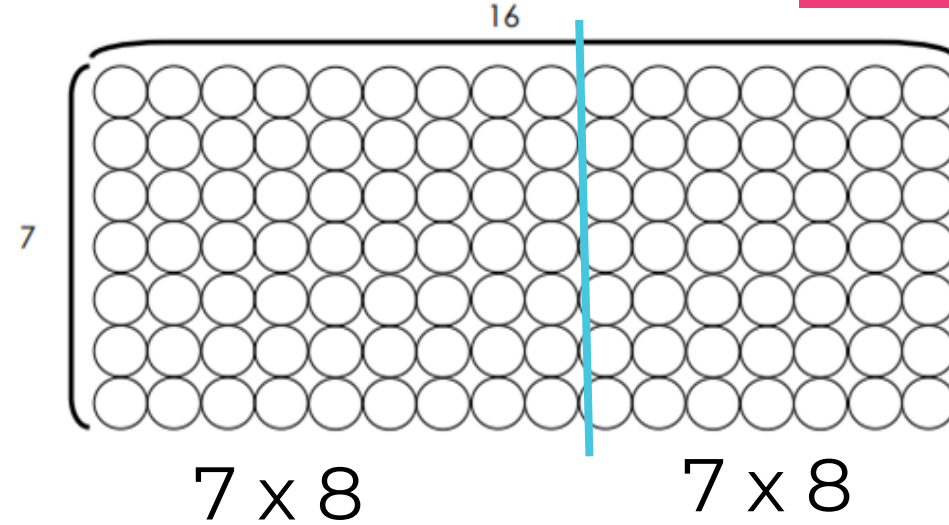
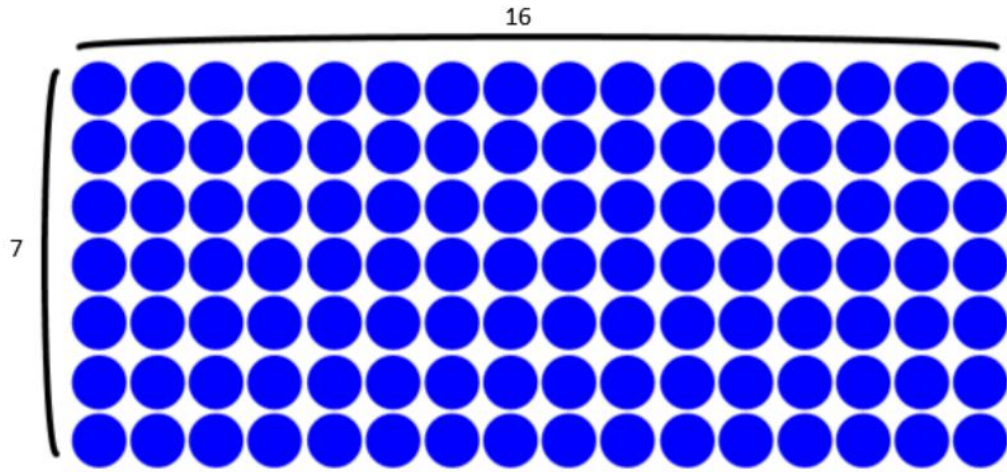
Resume once you're finished



Let's explore answers

How could you calculate 7×16 using known facts?

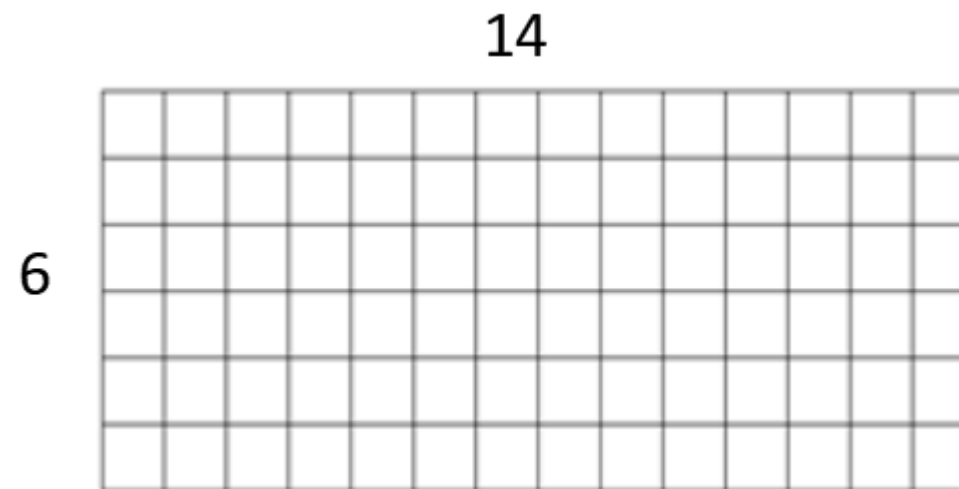
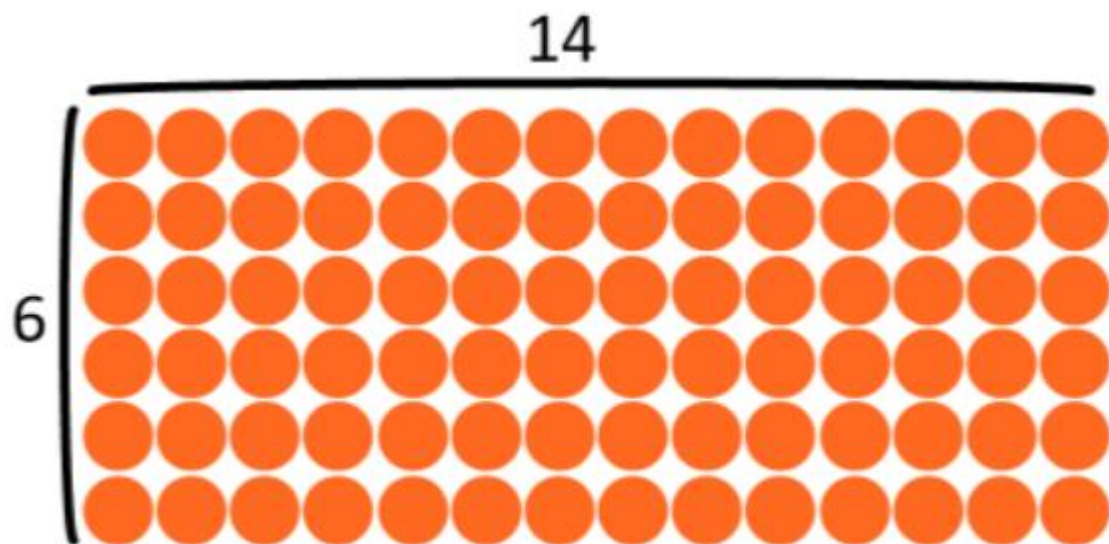
$$7 \times 16 = 122$$



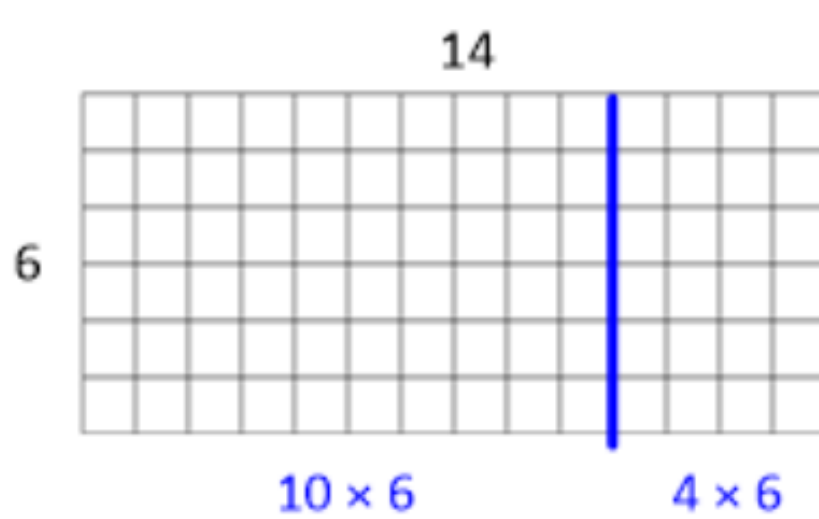
Distributive law



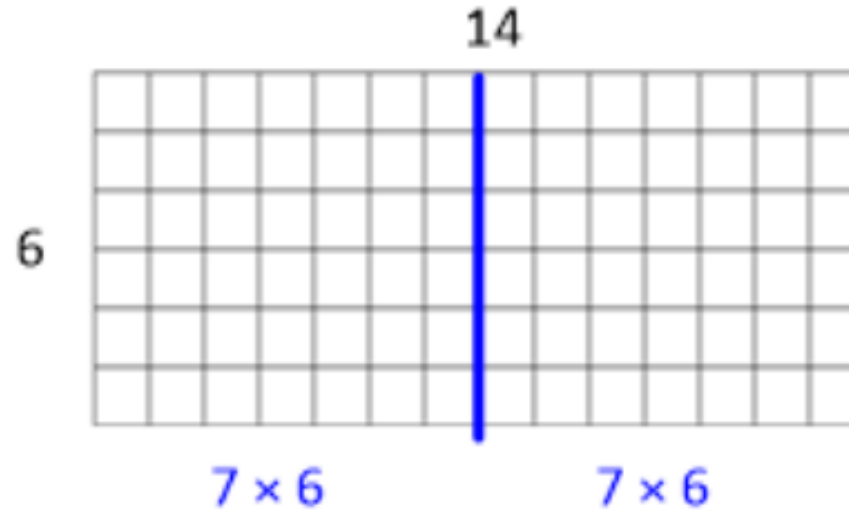
$$6 \times 14$$



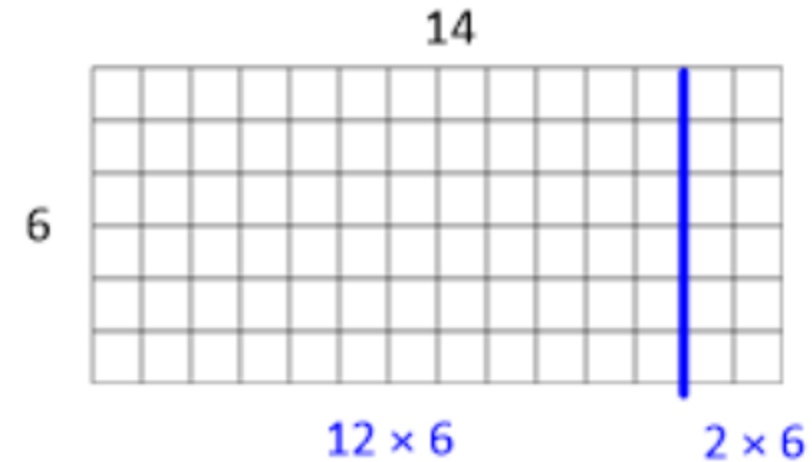
$$6 \times 14$$



$$\begin{aligned} 10 \times 6 &= 60 \\ 4 \times 6 &= 24 \\ 60 + 24 &= 84 \end{aligned}$$



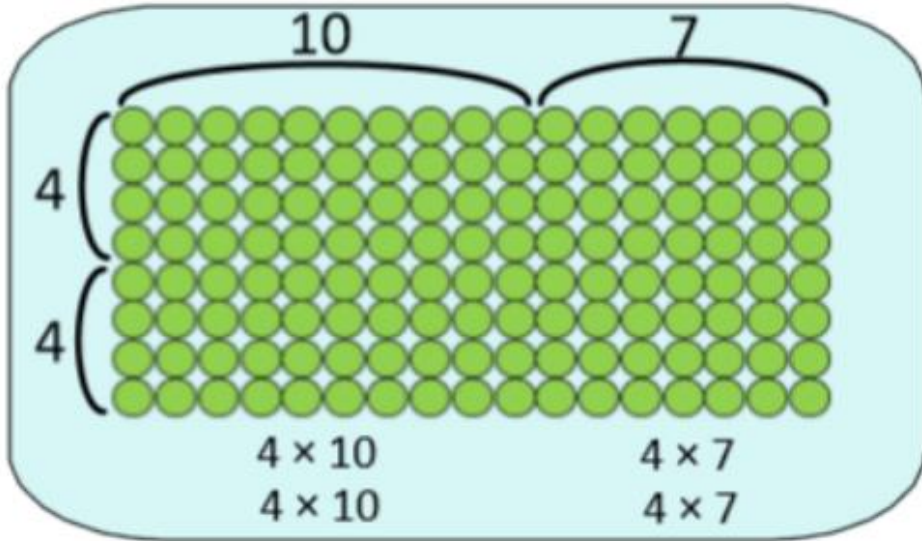
$$\begin{aligned} 7 \times 6 &= 42 \\ 7 \times 6 &= 42 \\ 42 + 42 &= 84 \end{aligned}$$



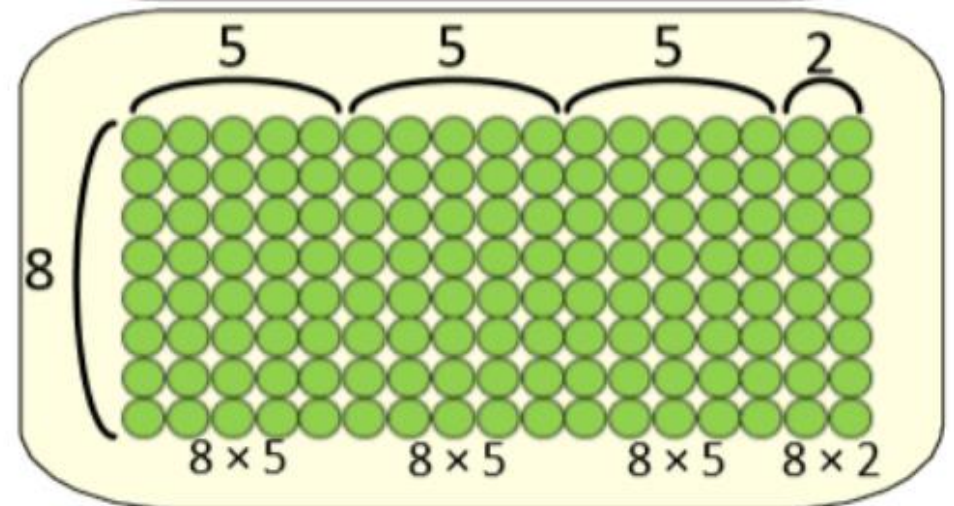
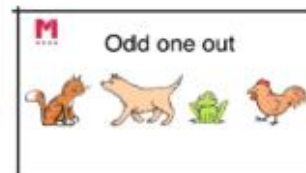
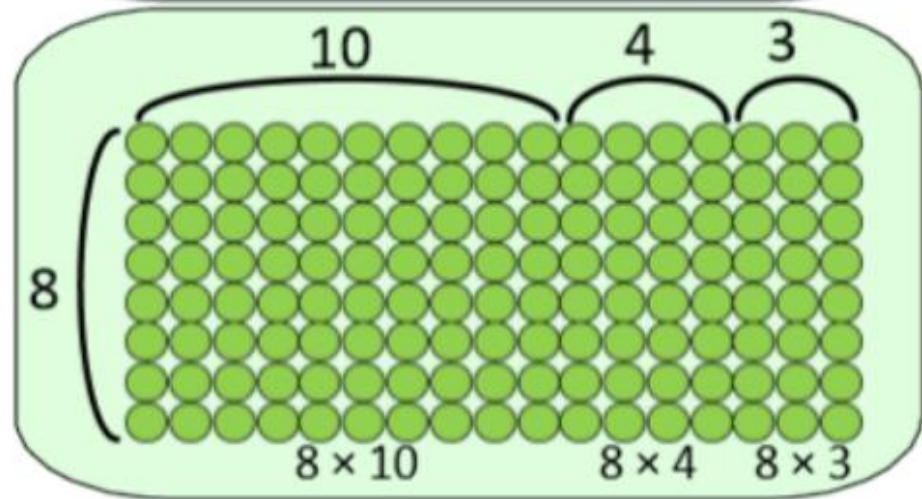
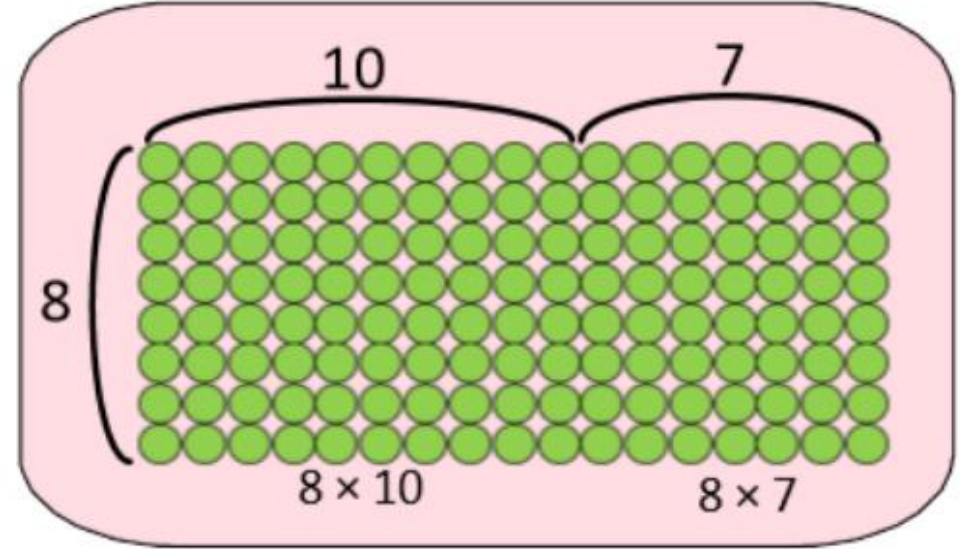
$$\begin{aligned} 12 \times 6 &= 72 \\ 2 \times 6 &= 12 \\ 72 + 12 &= 84 \end{aligned}$$



Spot the odd one out



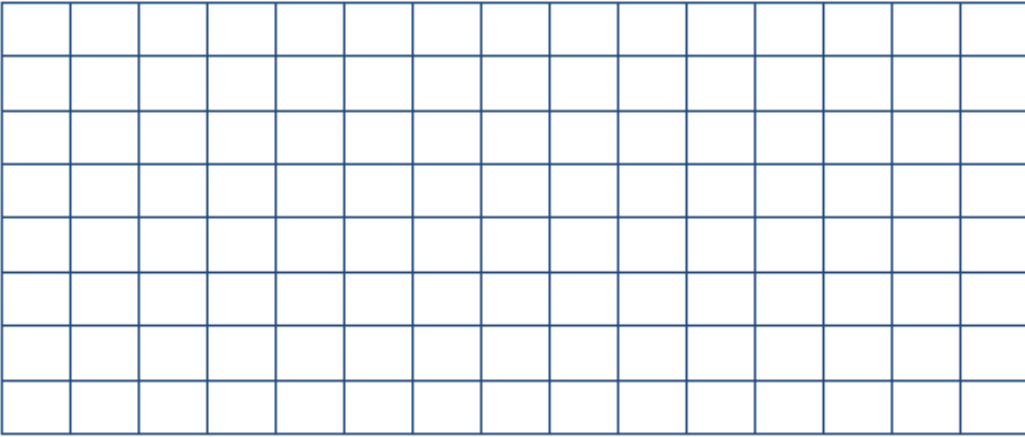
$$8 \times 17$$



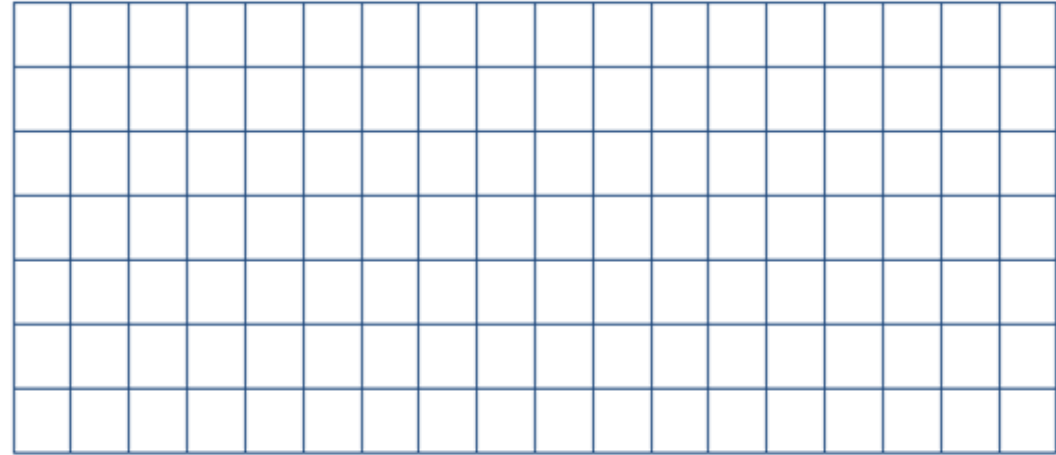
Independent Task

Use the distribution law to calculate the equations.

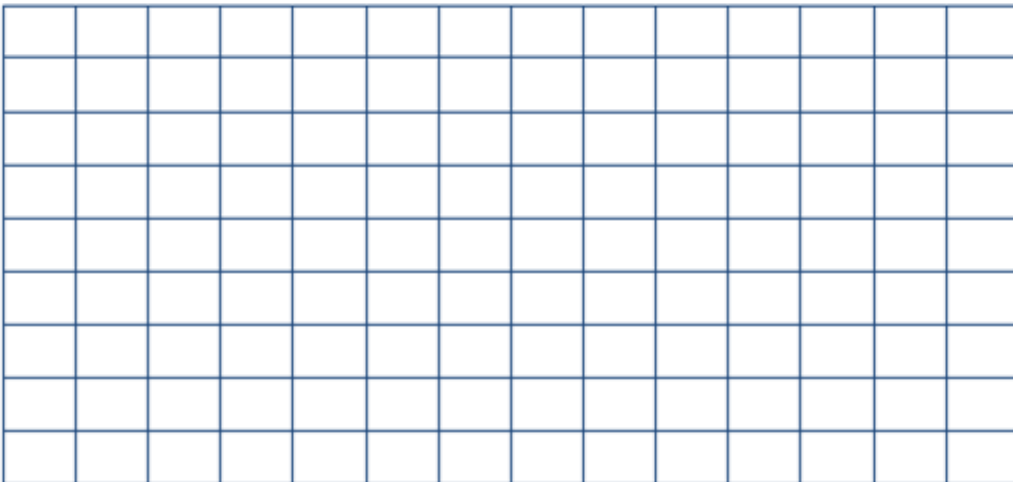
$$8 \times 15$$



$$7 \times 18$$



$$9 \times 14$$



**Pause the video to
complete your task**



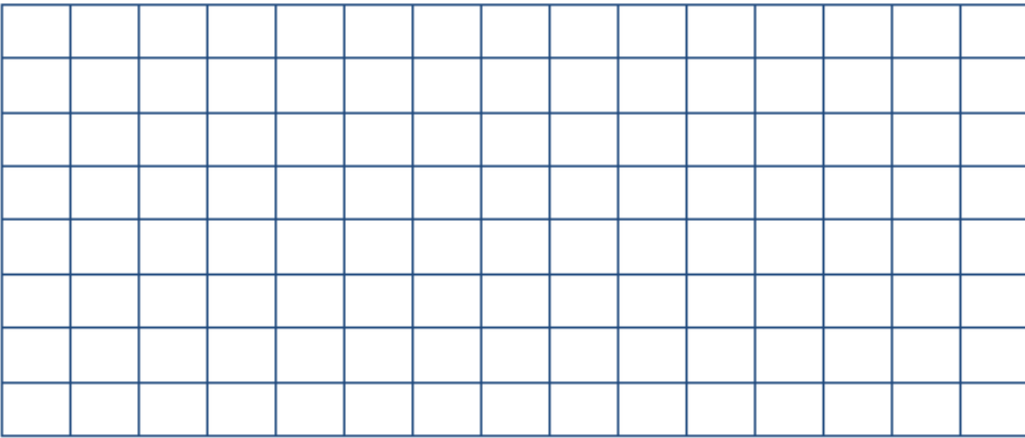
Resume once you're finished



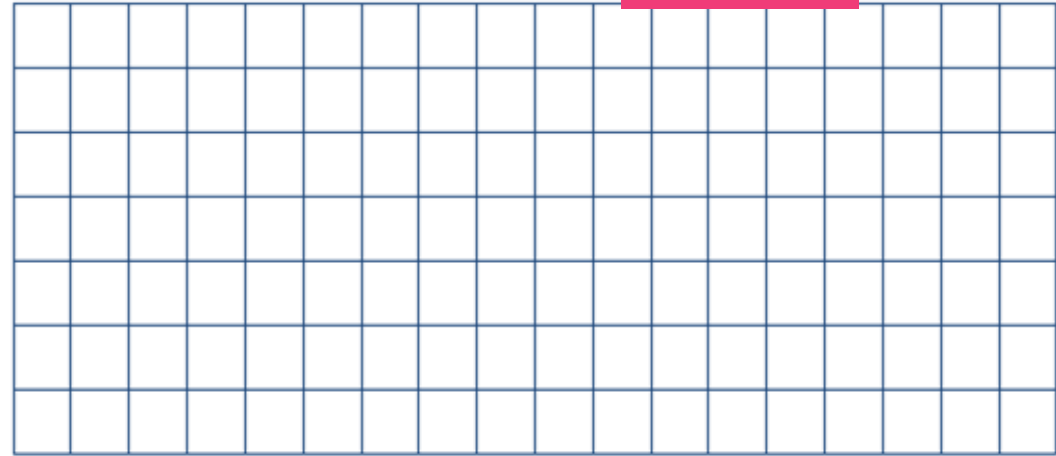
Independent Task Answers

Use the distribution law to calculate the equations.

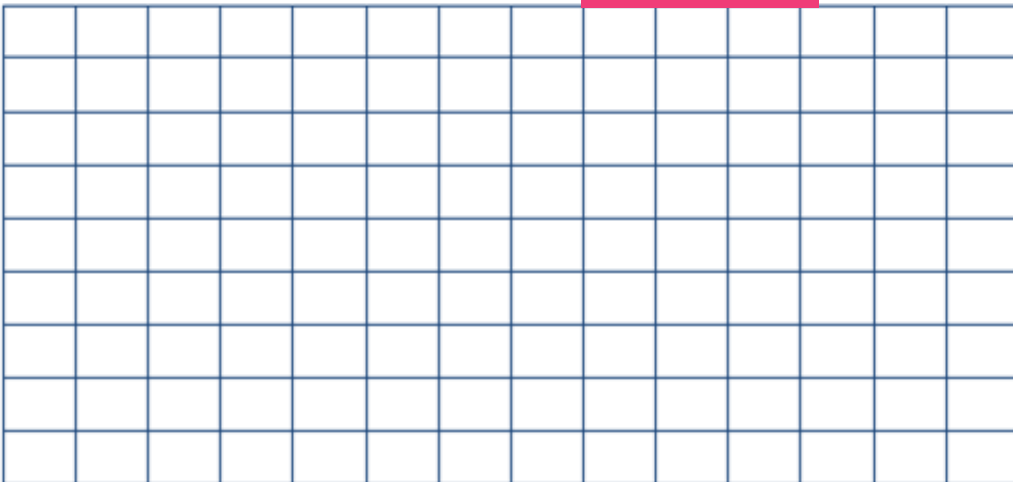
$$8 \times 15 = 120$$



$$7 \times 18 = 126$$



$$9 \times 14 = 126$$



Now complete the quiz!

