LESSON MAKER PRO

Divide the Rectangle

Use arrays and area models to show division.

GRADE 4 · 4.NBT.B.12.a

4.NBT.B.12.a "Illustrate and/or explain quotients using equations, rectangular arrays, and/or area models."

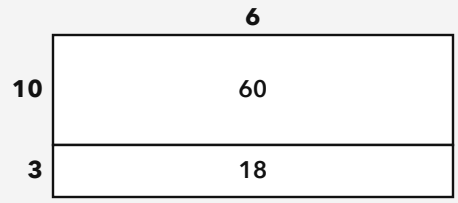
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THE BIG IDEA

An array shows equal rows, so you can divide the total number of dots by the number of rows to find the dots in each row. For a larger area model, divide each smaller area by the same side length, then add the lengths you find.

WORKED EXAMPLE

Use the side lengths in the model to find 78 ÷ 6.

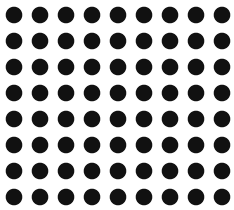


1. 10 × 6 = 60
2. 3 × 6 = 18
3. 60 + 18 = 78
4. 10 + 3 = 13

Answer: 78 ÷ 6 = 13

PRACTICE 6 problems

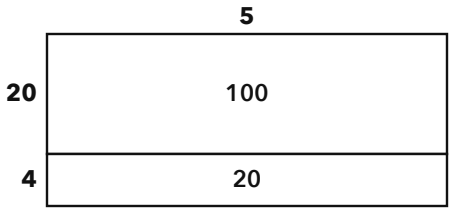
1 Look at the array. How many dots are in each row? Write a division equation for the array.



ANSWER _____

_____

2 The full model has an area of 120 square units. Use the model to find 120 ÷ 5. Write an equation for each smaller rectangle.



ANSWER _____

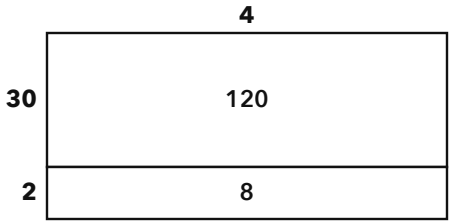
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3 Find 144 ÷ 9. Show how you can split 144 into two multiples of 9.

ANSWER _____

_____

4 The full model has an area of 128 square units. What division equation does the model show? Find its quotient.



ANSWER _____

_____

5 Find 225 ÷ 5. Write a multiplication equation to check your answer.

ANSWER _____

_____

6 Find 336 ÷ 7. Show one way to split 336 to help you divide.

ANSWER _____

_____

APPLY IT Show your work

1 An artist puts 168 stickers equally on 8 pages of a sketchbook. How many stickers go on each page? Show how you divide.

WORK SPACE

ANSWER _____

2 A game club shares 252 cards equally among 7 teams. How many cards does each team get? Show how you divide.

WORK SPACE

ANSWER _____

CHALLENGE One step up

Find 468 ÷ 9. Show two different ways to split 468 into sums of multiples of 9. Explain why both ways give the same quotient.

WORK SPACE AND ANSWER

ANSWER KEY

Divide the Rectangle

GRADE 4 · 4.NBT.B.12.a

PART 1 · PRACTICE

#	PROBLEM	ANSWER
1	Look at the array. How many dots are in each row? Write a division equation for the array.	**9 dots in each row; 72 ÷ 8 = 9**
2	The full model has an area of 120 square units. Use the model to find 120 ÷ 5. Write an equation for each smaller rectangle.	**20 × 5 = 100 and 4 × 5 = 20; 120 ÷ 5 = 24**
3	Find 144 ÷ 9. Show how you can split 144 into two multiples of 9.	**144 = 90 + 54; 90 ÷ 9 = 10 and 54 ÷ 9 = 6, so 144 ÷ 9 = 16**
4	The full model has an area of 128 square units. What division equation does the model show? Find its quotient.	**30 × 4 = 120 and 2 × 4 = 8; 128 ÷ 4 = 32**
5	Find 225 ÷ 5. Write a multiplication equation to check your answer.	**225 ÷ 5 = 45; 45 × 5 = 225**
6	Find 336 ÷ 7. Show one way to split 336 to help you divide.	**336 = 280 + 56; 280 ÷ 7 = 40 and 56 ÷ 7 = 8, so 336 ÷ 7 = 48**

PART 2 · APPLY IT

1. **21 stickers per page** Split 168 into 160 + 8. Divide each part by 8: 20 + 1 = 21.
2. **36 cards per team** Split 252 into 210 + 42. Divide each part by 7: 30 + 6 = 36.

CHALLENGE

468 = 360 + 108, so 468 ÷ 9 = 40 + 12 = 52. Also, 468 = 450 + 18, so 468 ÷ 9 = 50 + 2 = 52. Both splits have the same total, and every part is divided by 9.

Accept other correct splits into multiples of the divisor. For the challenge, both splits must be different and must show a quotient of 52.