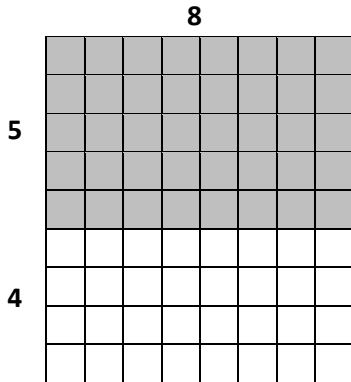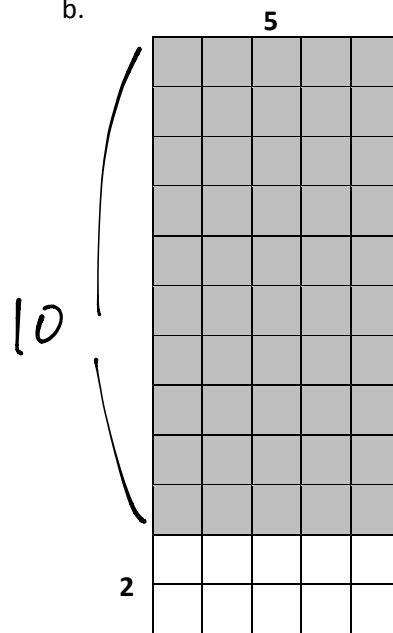Name _____   Date _____

1. Label the side lengths of the shaded and unshaded rectangles. Then find the total area of the large rectangle by adding the areas of the 2 smaller rectangles.
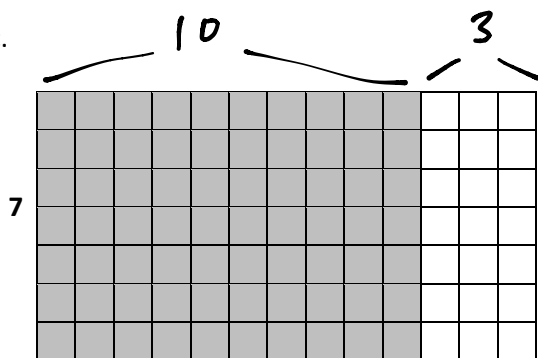
a.

8

5

4

$9 \times 8 = (5 + 4) \times 8$

$= (5 \times 8) + (4 \times 8)$

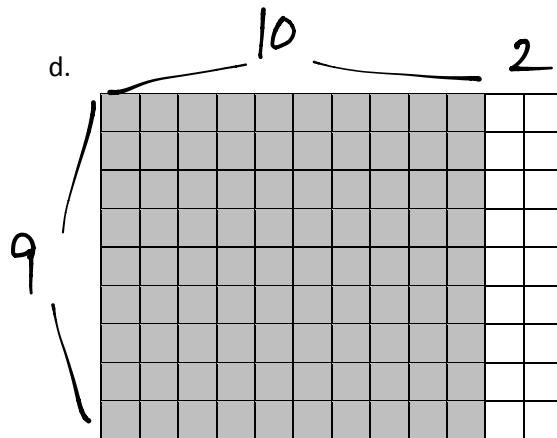$= \underline{40} + \underline{32}$

$= \underline{72}$ square units

b.

5

10

2

$12 \times 5 = (\underline{10} + 2) \times 5$

$= (\underline{10} \times 5) + (2 \times 5)$

$= \underline{50} + 10$

$= \underline{60}$ square units

c.

10   3

7
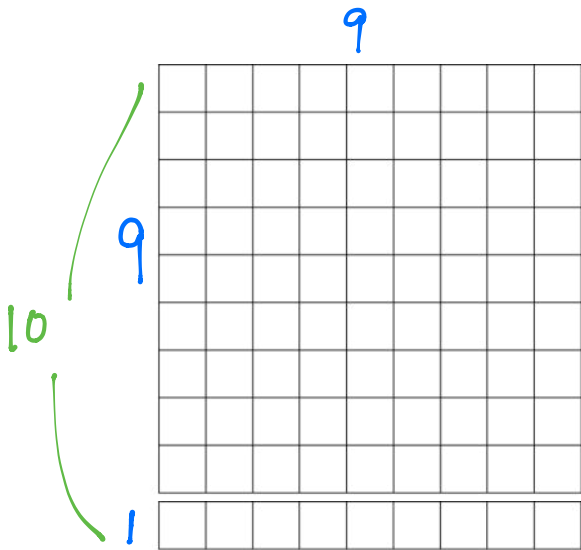
$7 \times 13 = 7 \times (\underline{10} + 3)$

$= (7 \times \underline{10}) + (7 \times 3)$

$= \underline{70} + \underline{21}$

$= \underline{91}$ square units

d.

10   2

9

$9 \times 12 = 9 \times (\underline{10} + \underline{2})$

$= (9 \times \underline{10}) + (9 \times \underline{2})$

$= \underline{90} + \underline{18}$

$= \underline{108}$ square units

Lesson 10: Apply the distributive property as a strategy to find the total area of a large rectangle by adding two products.
**Date:** 9/30/13

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2. Finn imagines 1 more row of nine to find the total area of 9 × 9 rectangle. Explain how this could help him solve 9 × 9.

9

9

10

1

$$9 \times 9 = (10-1) \times 9$$
$$= (10 \times 9) - (1 \times 9)$$
$$= 90 - 9$$
$$= 81$$

10 nines is 90, but Finn only wanted 9 nines, so he needed to subtract one nine from 90, which gives 81 as the product.

3. Shade to break the 16 × 4 rectangle into 2 smaller rectangles. Then find the sum of the areas of the 2 smaller rectangles to find the total area. Explain your thinking.

4

10

16

6
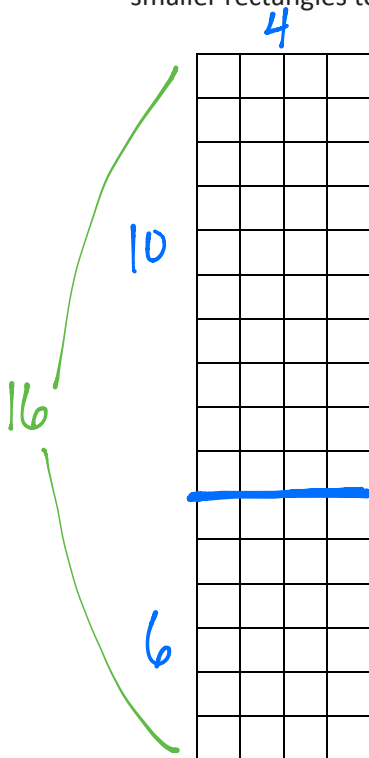
$$16 \times 4 = (10+6) \times 4$$
$$= (10 \times 4) + (6 \times 4)$$
$$= 40 + 24$$
$$= 64$$

We cut the 16 x 4 rectangle into two smaller rectangles: one is 10x4 and the other is 6x4. Their areas are 40 square units and 24 square units. The total area is 40+24 =64 square units.

COMMON CORE

Lesson 10:   Apply the distributive property as a strategy to find the total area of a large rectangle by adding two products.

Date: 9/30/13

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