EXAMPLE

What is $11 \times 11$?

We already know $10 \times 10 = 100$.

To get from a $10 \times 10$ square to an $11 \times 11$ square, we just add 10 squares on the side and 11 squares on the top:

$$11 \times 11 = (10 \times 10) + (10 + 11) = 100 + 21 = 121.$$  

PRACTICE

34. Now that we know $11 \times 11 = 121$, what is $12 \times 12$?  

35. $13 \times 13$  

36. $14 \times 14$  

37. How much larger is $15$ squared than $14$ squared?
To get from a 20×20 square to a 19×19 square, we remove a row on top and a column on the side. To find 19×19, we subtract 20 and 19 from 400.

Subtracting 20 and 19 is the same as subtracting 39:
19×19 = (20×20) − 20 − 19 = 400 − 39 = 361.

PRACTICE

38. Now that we know 19×19 = 361, what is 18×18?

39. What is (18×18) − (17×17)?

40. What is (93×93) − (92×92)?
PRACTICE

Complete these sequences of perfect squares.

41.  200 \times 200 = \underline{\hspace{2cm}}
    201 \times 201 = \underline{\hspace{2cm}}
    202 \times 202 = \underline{\hspace{2cm}}

42.  35 \times 35 = \underline{\hspace{2cm}}
    36 \times 36 = \underline{\hspace{2cm}}
    37 \times 37 = \underline{\hspace{2cm}}

43.  50 \times 50 = \underline{\hspace{2cm}}
    49 \times 49 = \underline{\hspace{2cm}}
    48 \times 48 = \underline{\hspace{2cm}}

44.  25 \times 25 = \underline{\hspace{2cm}}
    24 \times 24 = \underline{\hspace{2cm}}
    23 \times 23 = \underline{\hspace{2cm}}

45.  29 \times 29 = \underline{\hspace{2cm}}
    30 \times 30 = \underline{\hspace{2cm}}
    31 \times 31 = \underline{\hspace{2cm}}

46.  39 \times 39 = \underline{\hspace{2cm}}
    40 \times 40 = \underline{\hspace{2cm}}
    41 \times 41 = \underline{\hspace{2cm}}