Square Numbers

To find square numbers.

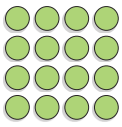
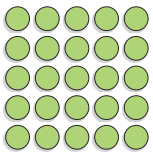
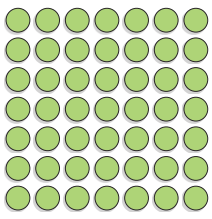
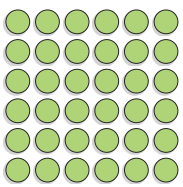
Cut out the cards below and find and match up the arrays, calculations and square number notations. Write in the answers after each equals sign to find the square numbers.

For example:



$2 \times 2 = 4$

$2^2 = 4$

Array	Calculation	Square Number Notation
	$5 \times 5 =$	$4^2 =$
	$6 \times 6 =$	$3^2 =$
	$3 \times 3 =$	$7^2 =$
	$4 \times 4 =$	$6^2 =$
	$7 \times 7 =$	$5^2 =$

Array	Calculation	Square Number Notation

Square Numbers

To find square numbers.

1) a) Shade all the square numbers on the multiplication grid.

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

b) What do you notice?_____

_____

_____

2) Complete the table.

Square Number Notation	Multiplication Expression	Answer
3^2		9
5^2	5 × 5	
	7 × 7	49
9^2		81
	10 × 10	
12^2	12 × 12	

3) Write <, > or = to complete the statements.

4^2 ☐ 5 × 5

7^2 ☐ 47

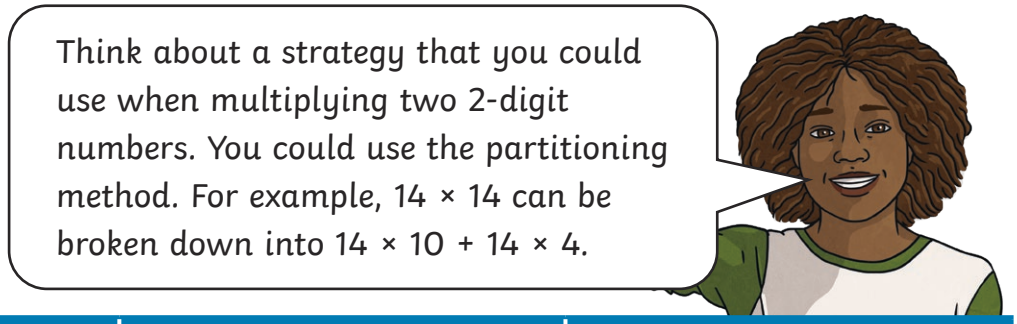
64 ☐ 8 squared

13 squared ☐ 163

Square Numbers

To find square numbers.

1) Complete the table.



Square Number Notation	Multiplication Expression	Answer
14^2		196
15^2	15 × 15	
		256
17^2		
	18 × 18	
19^2		

2) Write <, > or = to complete the statements.

20^2 ☐ 420

30^2 ☐ 900

3500 ☐ 50 squared

100 squared ☐ 1000

3) a)



I am thinking of a number. I square it, add 12 and subtract 4. My answer is 44. What is my number?

The number is ☐.

b)

I am thinking of a number. I square it, subtract 13 and add 7. My answer is 75. What is my number?



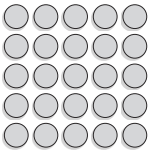
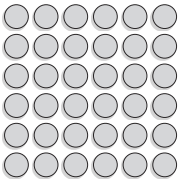
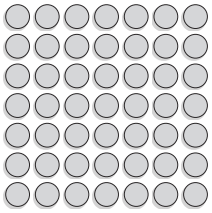
The number is ☐.

4) The product of two square numbers always equals a square number.

Is the above statement correct? Convince me!

Square Numbers **Answers**

Cut out the cards below and find and match up the arrays, calculations and square number notations. Write in the answers after each equals sign to find the square numbers.

Array	Calculation	Square Number Notation
	$3 \times 3 = \mathbf{9}$	$3^2 = \mathbf{9}$
	$4 \times 4 = \mathbf{16}$	$4^2 = \mathbf{16}$
	$5 \times 5 = \mathbf{25}$	$5^2 = \mathbf{25}$
	$6 \times 6 = \mathbf{36}$	$6^2 = \mathbf{36}$
	$7 \times 7 = \mathbf{49}$	$7^2 = \mathbf{49}$

Square Numbers **Answers**

1) a) Shade all of the square numbers on the multiplication grid.

×	1	2	3	4	5	6	7	8	9	10	11	12
1	1	2	3	4	5	6	7	8	9	10	11	12
2	2	4	6	8	10	12	14	16	18	20	22	24
3	3	6	9	12	15	18	21	24	27	30	33	36
4	4	8	12	16	20	24	28	32	36	40	44	48
5	5	10	15	20	25	30	35	40	45	50	55	60
6	6	12	18	24	30	36	42	48	54	60	66	72
7	7	14	21	28	35	42	49	56	63	70	77	84
8	8	16	24	32	40	48	56	64	72	80	88	96
9	9	18	27	36	45	54	63	72	81	90	99	108
10	10	20	30	40	50	60	70	80	90	100	110	120
11	11	22	33	44	55	66	77	88	99	110	121	132
12	12	24	36	48	60	72	84	96	108	120	132	144

b) What do you notice?

The children should notice that the square numbers form a diagonal pattern through the multiplication grid.

2) Complete the table.

Square Number Notation	Multiplication Expression	Answer
3^2	**3 × 3**	9
5^2	5 × 5	**25**
7^2	7 × 7	49
9^2	**9 × 9**	81
10^2	10 × 10	**100**
12^2	12 × 12	**144**

3) Write <, > or = to complete the statements.

4^2 **<** 5 × 5

7^2 **>** 47

64 **=** 8 squared

13 squared **>** 163

Square Numbers **Answers**

1) Complete the table.

Square Number Notation	Multiplication Expression	Answer
14^2	**14 × 14**	196
15^2	15 × 15	**225**
16^2	**16 × 16**	256
17^2	**17 × 17**	**289**
18^2	18 × 18	**324**
19^2	**19 × 19**	**361**

2) Write <, > or = to complete the statements.

20^2 **<** 420

30^2 **=** 900

3500 **>** 50 squared

100 squared **>** 1000

3) a) I am thinking of a number. I square it, add 12 and subtract 4. My answer is 44.
What is my number?
The number is **6**.

b) I am thinking of a number. I square it, subtract 13 and add 7. My answer is 75.
What is my number?
The number is **9**.

4) The product of two square numbers always equals a square number.
Is the above statement correct? Convince me!

The statement is correct.
Multiplying two square numbers always equals a square number.
For example:
4 × 9 = 36, 4 × 16 = 64, 4 × 25 = 100 and 4 × 36 = 144