

Bronze

1a. Match the calculation to the correct arrays.

$$5^2$$

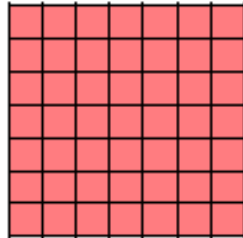
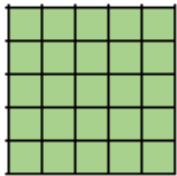
(5 x 5)

$$7^2$$

(7 x 7)

$$2^2$$

(2 x 2)

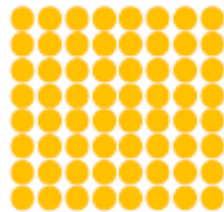


VF

2a. Calculate:



$4^2 =$



$8^2 =$



VF

3a. Find the factors of the number represented below. Is it a square number?



VF

4a. Complete the table below.

72		
— 2		

1b. 18 is the sum of two square numbers.

$$18 = 3^2 + 3^2$$

$$18 = (3 \times 3) + (3 \times 3)$$



Using the example above, complete the following:

45 is the sum of 3^2 and which other square number?

$$45 = (3 \times 3) + (? \times ?)$$



PS

2b Solve the following problem.

I think of a number. I square it and add 15. My answer is 40. What was my number?

Use the array below to help you.



PS

3b. Frankie says,

I can use this array to calculate 5^2 .



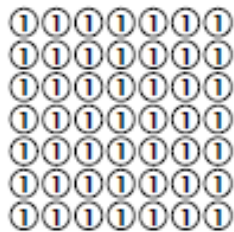
Is Frankie correct? Convince me.

5a. Match the square numbers to the correct representations.

3^2

5^2

7^2

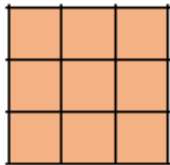


25



VF

6a. Complete the number statements.

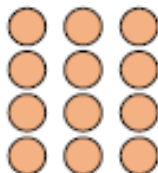


___² =

___² =

VF

7a. Find the factors of each number below. Circle the square number.



VF

8a. Complete the table below.

___ ²	2 x 2	4
	4 x 4	
11 ²	___ x ___	
	___ x ___	64

4b. 29 is the sum of two square numbers.

$$29 = 5^2 + 2^2$$

Using the example above, complete the following:

89 is the sum of two squared numbers. What could they be?

193 is the sum of two squared numbers. What could they be?



PS

5b Solve the following problems.

I think of a number. I square it and add 11. My answer is 92. What was my number?

I think of another number. I square it and subtract 14. My answer is 107. What was my number?



PS

6b. Laura says,

To square a number, you add the number twice. For example, 2^2 means $2 + 2$ which is 4.



Is Laura correct? Convince me.

Gold

9a. Match the calculations to the correct square numbers.

nine squared

ten squared

eight squared

one hundred

sixty-four

eighty-one



VF

10a. Calculate:

Three squared =

$_ \times _ = 81$

$_ \times _ = 25$

Two squared =



VF

11a. Find the factors of each number below. Circle the square numbers.

thirty-six

18

sixty-four



VF

12a. Complete the table below.

$_ ^2$	$_ \times _$	144
		49
		64
		9

7b. 149 is the sum of 2 squared numbers.

$$149 = 10^2 + 7^2$$

2 squared numbers are added together to make an even number between 50 and 100. What could they be?

3 squared numbers are added together to make an odd number between 150 and 200. What could they be?



PS

8b. Solve the following problems.

I think of a number. I square it, add 15 and times by 5. My answer is 255. What was my number?

I think of another number. I square it, subtract 15 and then add 25. My answer is 131. What was my number?



PS

9b. Lin says,

When I add an odd square number to another odd square number, the answer is always even.



Is Lin correct? Convince me.

Challenge

1. International spy Jane Band is trying to crack the code to unlock the door so she can escape the room the evil Dr Foul has trapped her in!

She has found some clues written on the wall:



- The code is made up of 3 numbers.
- The sum of all the numbers in the code is a square number.
- Two of the numbers in the code are square numbers.
- All of the numbers are odd.

Explore the possible combination of numbers the code could be.

2. Arrange the loop cards so that each calculation is matched to the correct answer. Fill in the missing card to complete the loop.

9	The sum of 4^2 and 3^2	119	The product of 5^2 and 2^2	100	$8^2 - 4^2$
244	The total of 7^2 and 9^2	25	$12^2 - 5^2$		$\frac{\quad}{\quad} \times \frac{\quad}{\quad} = 121$
11	$10^2 + 12^2$	130	6^2 divided by 4	48	$8^2 \times 3^2$