1) Complete the missing boxes in the table to identify the first ten square numbers. You might want to use counters to create each array on your table. The first one has been done for you.

| $1 \times 1$ | $1^{2}$ | 1 | $\bullet$ |  |  | $\begin{aligned} & \bullet \bullet \bullet \bullet \bullet \\ & \bullet \bullet \bullet \bullet \bullet \bullet \\ & \bullet \bullet \bullet \bullet \bullet \bullet \\ & \bullet \bullet \bullet \bullet \bullet \\ & \bullet \bullet \bullet \bullet \bullet \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $2^{2}$ |  | $\bullet \bullet$ |  | $7^{2}$ | $\begin{aligned} & \bullet \bullet \bullet \bullet \bullet \bullet \\ & \bullet \bullet \bullet \bullet \bullet \bullet \\ & \bullet \bullet \bullet \bullet \bullet \bullet \bullet \\ & \bullet \bullet \bullet \bullet \bullet \bullet \\ & \bullet \bullet \bullet \bullet \bullet \bullet \end{aligned}$ |
| $3 \times 3$ |  |  |  | $8 \times 8$ |  |  |
|  |  | 16 | $\bullet \bullet \bullet \bullet$ $\bullet \bullet \bullet$ <br>  |  | $9^{2}$ |  |
|  | $5^{2}$ |  |  |  |  | -••• • • • • • - $\cdot$ - -- • - ••• - - - - - • • -- • • • • • - • -- •••••• • - • • ••• • 000000000 - • - • • • • • -- - • • • • • • |

2) Why are these numbers called square numbers?
3) Look at the square numbers in the table. What patterns can you identify?
$\qquad$
$\qquad$
4) Jess says,
" $7^{2}$ is $14 . "$

Do you agree?
Explain your thinking.

$\qquad$
$\qquad$
2) True or False? Justify your answers and use examples.
a) The square of even numbers is always even.
b) All square numbers have an even number of factors.
$\qquad$
c) The product of two square numbers is a square number.
$\qquad$

1) The sum of two square numbers is 25 . What are the square numbers?
2) The sum of three square numbers less than 144 is another square number. What are the square numbers?
3) $A, B$ and $C$ are different square numbers less than 144. Can you find eight solutions to make this statement true?
$A+B>B-C$
