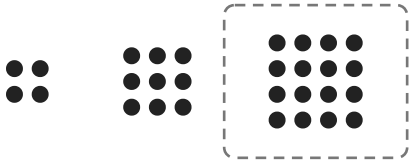


Square and Triangular Numbers

1

These are square patterns.
How many dots are in pattern 4?



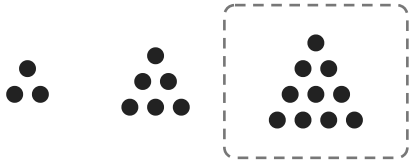
Pattern 2 Pattern 3 Pattern 4

$$4 \times 4 = 16$$

Pattern	2	3	4
Dots	4	9	16

2

These are triangle patterns.
How many dots are in pattern 4?



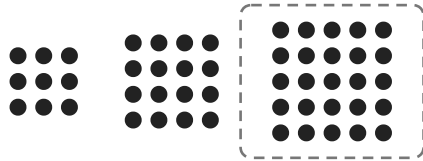
Pattern 2 Pattern 3 Pattern 4

$$6 + 4 = 10$$

Pattern	2	3	4
Dots	3	6	10

3

These are square patterns.
How many dots are in pattern 5?



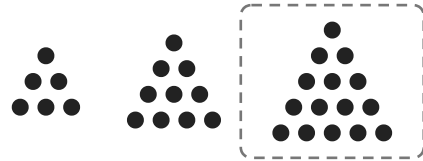
Pattern 3 Pattern 4 Pattern 5

$$5 \times 5 = 25$$

Pattern	3	4	5
Dots	9	16	25

4

These are triangle patterns.
How many dots are in pattern 5?



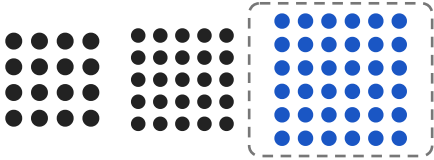
Pattern 3 Pattern 4 Pattern 5

$$10 + 5 = 15$$

Pattern	3	4	5
Dots	6	10	15

5

These are square patterns.
How many dots are in pattern 6?



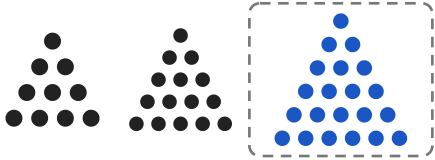
Pattern 4 Pattern 5 Pattern 6

$$6 \times 6 = 36$$

Pattern	4	5	6
Dots	16	25	36

6

These are triangle patterns.
How many dots are in pattern 6?



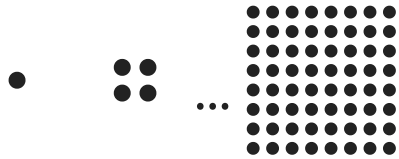
Pattern 4 Pattern 5 Pattern 6

$$15 + 6 = 21$$

Pattern	4	5	6
Dots	10	15	21

7

This square pattern has 64 dots.
Which pattern is it?



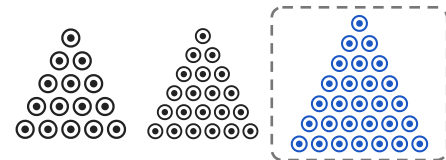
Pattern 1 Pattern 2 64 dots

$$8 \times 8 = 64$$

Pattern	1	2	...	8
Dots	1	4	...	64

8

Kim stacks cans in a triangle.
How many cans does she need for 7 rows?



5 rows 6 rows 7 rows

$$21 + 7 = 28$$

Rows	5	6	7
Cans	15	21	28

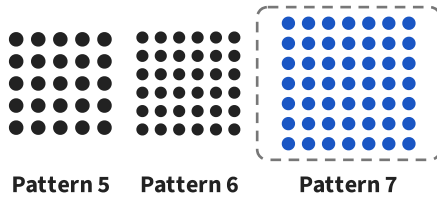
Square and Triangular Numbers *further practice*

ANSWERS

9



These are square patterns.
How many dots are in pattern 7?



Pattern 5 Pattern 6 Pattern 7

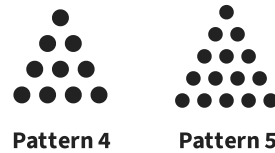
$$7 \times 7 = 49$$

Pattern	5	6	7
Dots	25	36	49

10



These are triangle patterns.
How many dots are in pattern 7?



Pattern 4 Pattern 5

$$15 + 6 = 21$$

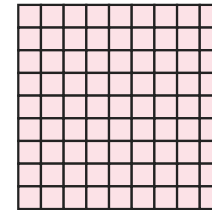
$$21 + 7 = 28$$

Pattern	4	5	6	7
Dots	10	15	21	28

11



A square patio has 9 rows of 9 slabs. How many slabs are there?



$$9 \times 9 = 81$$

Slabs = 81

12



Continue the triangular numbers.
Then circle the triangular numbers in the list.



Pattern 1 Pattern 2 Pattern 3

1 3 6 10 15 21

4 10 12

15 20 21

13



Write down a square number between 60 and 70.



Pattern 1 Pattern 2 Pattern 3

$$7 \times 7 = 49$$

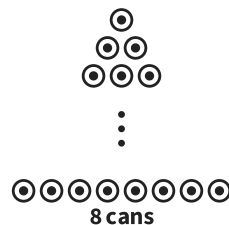
$$8 \times 8 = 64$$

Answer 64

14



Cans are stacked in a triangle.
The bottom row has 8 cans.
How many cans are there?



8 cans

$$1 + 2 + 3 + 4 + 5 + 6 + 7 + 8$$

Answer 36 cans

15



Is 12 a triangular number?
Finish the sentences.



Pattern 4 Pattern 5

Pattern 4 has 10 dots.

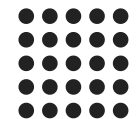
Pattern 5 has 15 dots.

12 is not a triangular number because it is between 10 and 15.

16



Kai says square pattern 5 has 10 dots, because $5 \times 2 = 10$.
What has Kai done wrong?
Finish the sentences.



Pattern 5

Kai has worked out 5×2 .

He should work out $5 \times 5 = 25$.