

Patterns

- 23 The first five terms in a pattern are shown below.

$$-0.5, -0.25, 0, 0.25, 0.5, \dots$$

If the pattern continues, which expression can be used to find the n th term?

- A $0.75n - 1.25$
B $-0.25n - 0.25$
 C $0.25n - 0.75$
D $-0.5n + 0.25$

INPUT THE EQUATIONS INTO CALCULATOR AND LOOK AT TABLE, IDENTIFY THE TABLE THAT MATCHES THE PATTERN.

X	Y
1	-1.5
2	-1.25
3	0
4	0.25
5	0.5

- 43 The first six numbers in a pattern are shown below.

$$n = 1 \quad 2 \quad 3 \quad 4 \quad 5 \quad 6$$
$$y = \frac{1}{3}, \frac{4}{3}, 3, \frac{16}{3}, \frac{25}{3}, 12, \dots$$

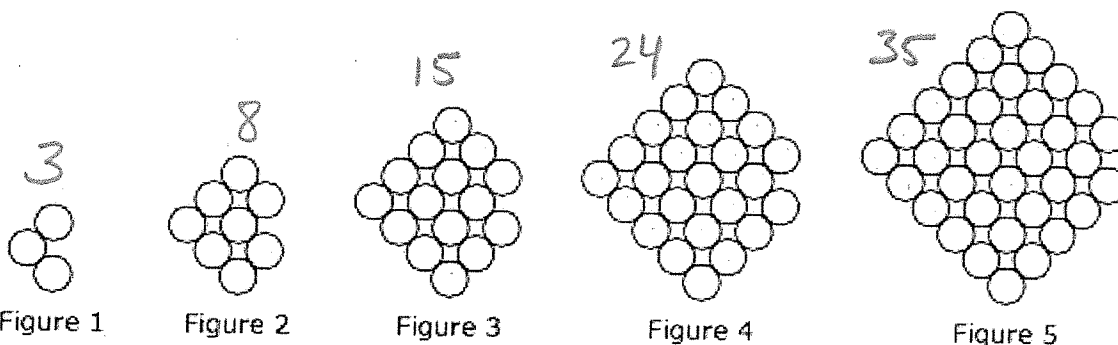
If the pattern continues, which expression can be used to find the n th number in the pattern?

- A $\frac{2n}{3}$
 B $\frac{n^2}{3}$
C $\frac{n^2}{6}$
D $\frac{2n}{6}$

$$\frac{1^2}{3} = \frac{1}{3} \quad \frac{2^2}{3} = \frac{4}{3} \quad \frac{3^2}{3} = \frac{9}{3} = 3 \quad \dots$$

Patterns

- 5 The first five figures in a pattern are shown below. Each figure is made up of identical circles.



If the pattern continues, which expression can be used to find the number of circles that make up Figure n ?

- A $n^2 + 2n$
- B $n^2 + 2$
- C $2n^2 + 1$
- D $2n^2 + n$

INPUT EQUATIONS INTO "Y=" IN YOUR CALCULATOR AND IDENTIFY THE TABLE THAT MATCHES THE PATTERN.

FIGURE	PATTERN
n	y
1	3
2	8
3	15
4	24
5	35

Expressions

- 9 In which step below does a mistake first appear in simplifying the expression $0.5(-12c + 6) - 3(c + 4) + 10(c - 5)$?

Step 1: $-6c + 3 - 3(c + 4) + 10(c - 5)$

Step 2: $-6c + 3 - 3c - 12 + 10(c - 5)$

Step 3: $-6c + 3 - 3c - 12 - 10c - 50$ COMBINE LIKE TERMS

Step 4: $7c - 41$ SHOULD BE $C - 59$

- A Step 1
- B Step 2
- C Step 3
- D Step 4