school nova™

1

Practicing Kangaroo:
How many numbers are greater than 10 and less than or equal to 31 which can be written with digits 1, 2 or 3 only? You can repeat digits.

(A) 2   (B) 4   (C) 6   (D) 7   (E) 8

2

Rabbit Venya eats cabbages and carrots. Each day he eats either 10 carrots, or 2 cabbages. Last week Venya ate 6 cabbages. How many carrots did he eat?

(A) 20   (B) 30   (C) 34   (D) 40   (E) 50
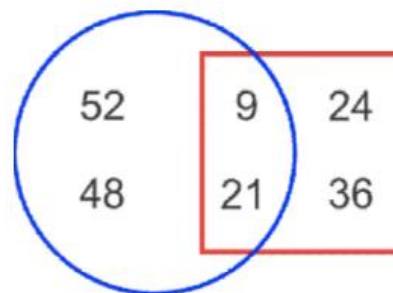
3

Tim has 4 red cubes, 3 blue cubes, 2 green cubes and 1 yellow cube. He builds a tower (see the picture) in such a way that no two adjacent cubes have the same color. What is the color of the middle cube?

(A) red   (B) blue   (C) green   (D) yellow

What is the sum of the numbers outside the square?

4

	52	9	24
	48	21	36

(**A**) 30   (**B**) 60   (**C**) 90   (**D**) 45   (**E**) 100

Report the time you spent: _____ minutes

5 Find all mistakes and correct them:

$7 \times 3 > 21$ $9 \times 9 > 79$ $7 \times 6 > 48$ $8 \times 9 < 76$

$42 < 7 \times 6$ $63 < 7 \times 9$ $6 \times 3 > 15$ $8 \times 4 > 24$

6 Calculate:

$20 \times 35 =$ $15 \times 100 =$ $250 \times 2 =$

$50 \times 5 =$ $25 \times 20 =$ $40 \times 50 =$

7 Solve word problems:

a) Amy brought 28 pencils to the class. Nick took 3 pencils, Mike took twice as many pencils as Nick, and Natalie took 3 times more than Mike. How many pencils Amy had in the end?

_____

b) There were 10 passengers on a bus. At the first stop, 9 passengers got on the bus. At the second stop, 5 passengers got on the bus, and 3 passengers got off. How many people were on the bus after two stops, including the driver?

_____

c) A taxi driver drove 3 kilometers from the airport to the bus station. Then he drove to the train station, which is 2 kilometers further away than the airport. Finally, he drove to the garage, which is 3 times further from the train station than the bus stop. How many kilometers did the taxi drive since it left the airport and arrived in the garage?

_____

d) During playtime, Lisa, Katie, and Jack hid under their desks. Jack spent 2 minutes there, and Lisa sat under her desk twice as long as Jack. Katie spent 3 minutes longer than Lisa under her desk. How long did Katie spend under her desk?

_____

8 Fill the blanks with numbers:

$12 + (6 \times \ldots) = 24$ $29 + (6 \times \ldots) = 53$

$19 + (6 \times \ldots) = 54$ $45 + (6 \times \ldots) = 93$
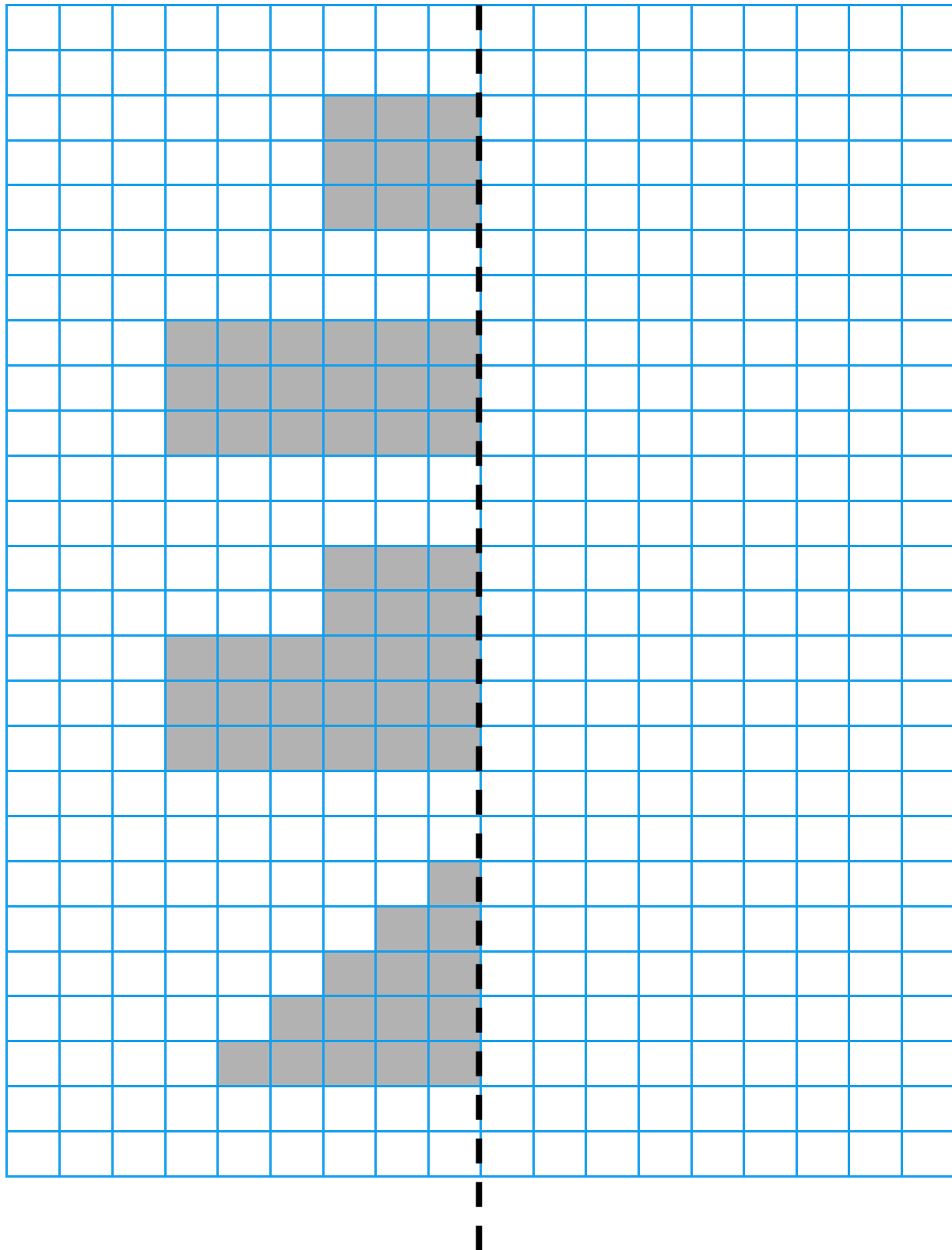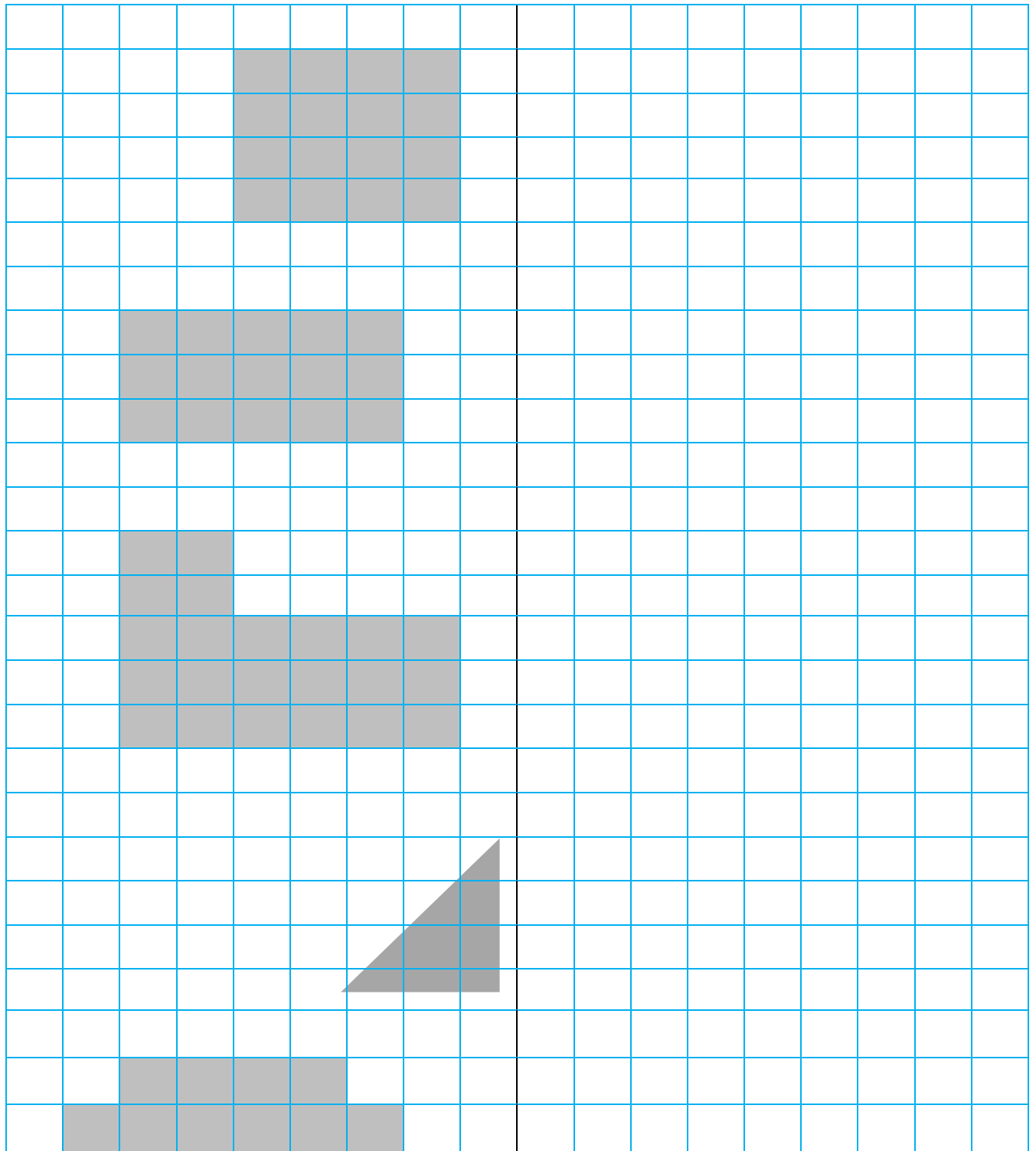
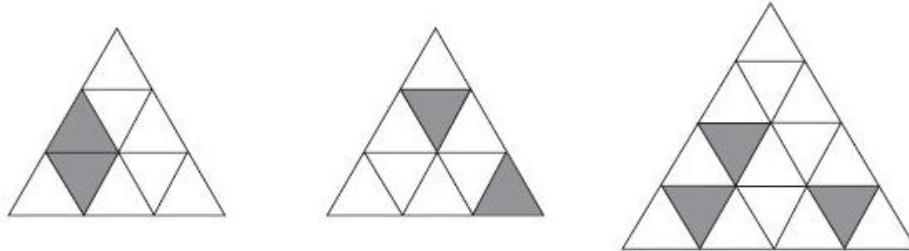**9** Try to figure out the pattern and find the missing number:

Rotational Symmetry. Properties of multiplication.

10

Draw a reflection of these shapes in the mirror line:

Rotational Symmetry. Properties of multiplication.

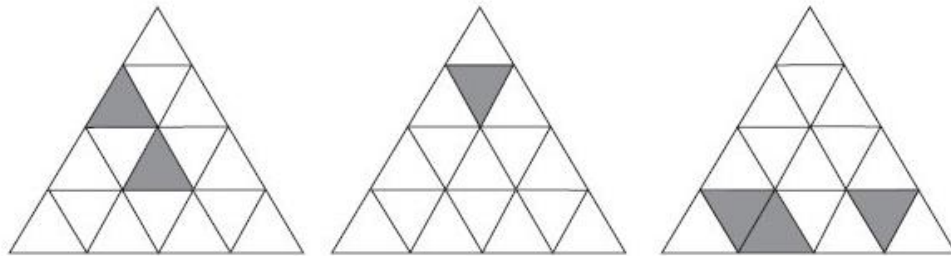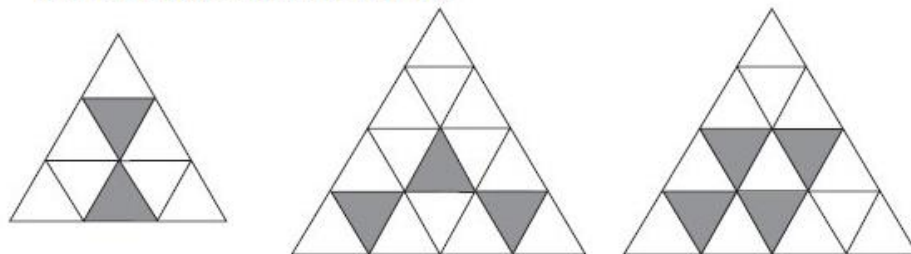**Rotational Symmetry. Properties of multiplication.**

11

(a) On each of these grids complete the shading so that the pattern has reflection but **not** rotation symmetry.

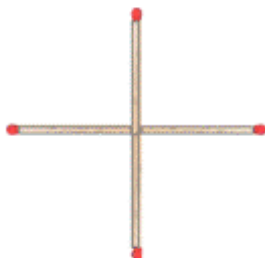(b) On each of these grids complete the shading so that the pattern has rotation but **not** reflection symmetry.

(c) On each of these grids complete the shading so that the pattern has reflection **and** rotation symmetry.

12

1. Move one matchstick to make a square.

4. Take one away from seven matchsticks, then move two to leave zero.