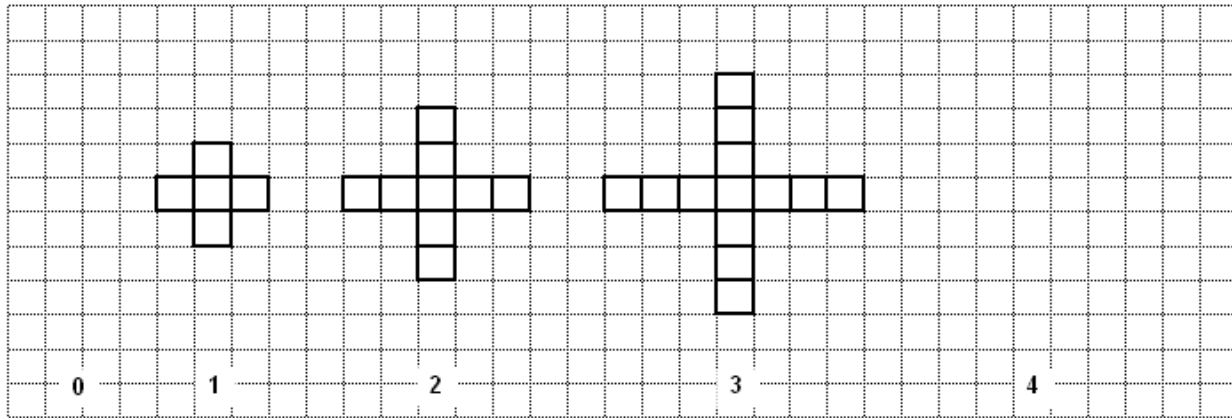


1. Study the following pattern, in which Figures 1, 2, and 3 have been drawn for you.



- a. Draw in Figure 0 and Figure 4.
- b. Using  $n$  to represent the figure number, write an expression for the total number of squares in any figure. Test your expression to make sure that it works for the entire pattern.
- c. Evaluate your expression to find the total number of squares in the twentieth figure. Show your work.

2. Write expressions for the following situations.

- |   |   |
|---|---|
| <p>a. A goose flying at a constant speed flew 400 miles over a period of <math>d</math> days. How many miles did it fly each day?</p> | <p>b. A car can travel 35 miles on each gallon of gas. How far can the car travel on <math>g</math> gallons of gas?</p> |
|---|---|

3. Simplify each numerical expression below.

a.  $12 \div 4 + 1 \cdot 2$

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b.  $15 - 3^2 + 2(8 - 2)$

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c.  $\frac{18 - 3 \cdot 4 + 4^2}{12 \div (4 + 2)}$

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4. Evaluate the following expressions if  $q = 5$ ,  $r = 6$ , and  $s = 3$

a.  $4(r-s)^2$

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b.  $q^2 - 4r - 1$

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c.  $\frac{6q}{5s}$

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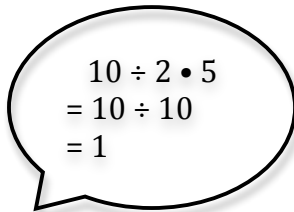
5. Decide whether each equation is true or false. If false, insert parentheses to make it true.

a.  $8 \cdot 4 - 3 \cdot 2 = 26$

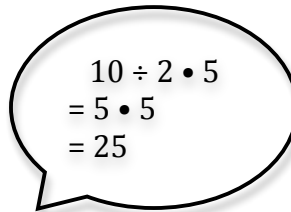
b.  $8 + 2^3 \div 4 = 4$

c.  $6 + 7 \cdot 2 + 5 = 55$

6. Regina and Camila are evaluating  $10 \div 2 \cdot 5$ . Who is correct? Explain.

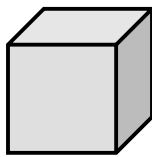


Regina



Camila

7. The expression  $6s^2$  can be used to find the surface area of a cube, where  $s$  is the length of an edge of the cube. What is the surface area of the cube shown below?



12 cm

8. Write expressions for the following statements. Use a variable to represent each unknown quantity.

a. 5 less than 3 times a number

b. the product of 4 and 6 more than a number