

# PRIME

Senior!

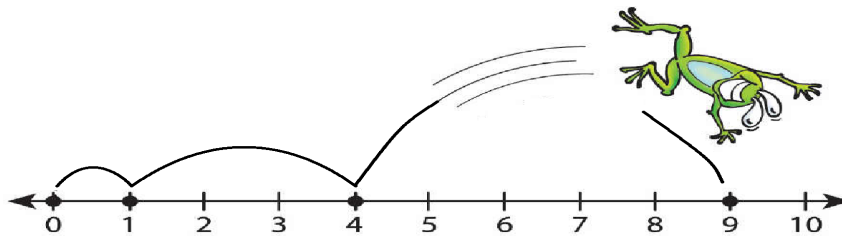
# mathgazine

## Square Differences

Name the two numbers that fit each fact.

The difference between the squares of two consecutive numbers is:

- A. 21, so the two consecutive numbers are: \_\_\_\_\_ and \_\_\_\_\_
- B. 17, so the two consecutive numbers are: \_\_\_\_\_ and \_\_\_\_\_
- C. 29, so the two consecutive numbers are: \_\_\_\_\_ and \_\_\_\_\_
- D. 61, so the two consecutive numbers are: \_\_\_\_\_ and \_\_\_\_\_



## $W \cdot Y^Z$

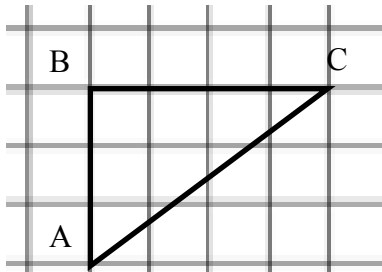
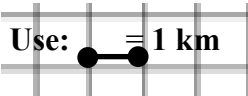
1. Replace W, Y and Z with the numbers 2, 3 and 5 in any order. What is the maximum value possible for the expression?  
\_\_\_\_\_
2. Replace W, Y and Z with the numbers 2, 3 and 5 in any order. What is the minimum value possible for the expression?  
\_\_\_\_\_

## MATHgazine Editors

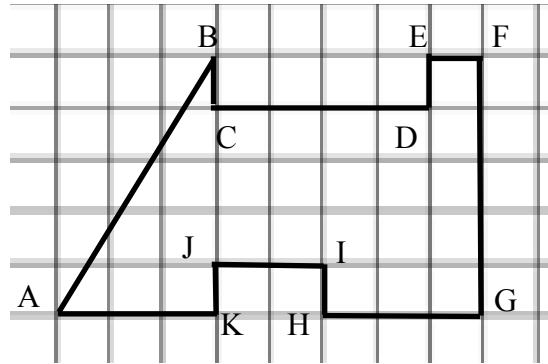
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# Path Puzzles

Determine the length of each path. Give measurements to the nearest tenth of a kilometer.

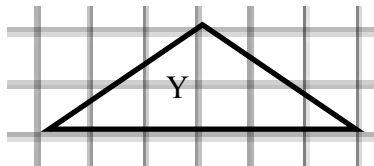
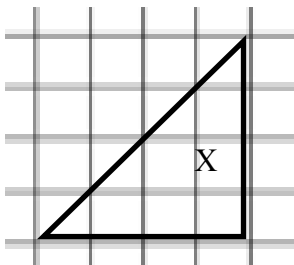


1. A to B to C = \_\_\_\_\_ km



2. A to B to C to D to E to F = \_\_\_\_\_ km

3. A to K to J to I to H to G = \_\_\_\_\_ km



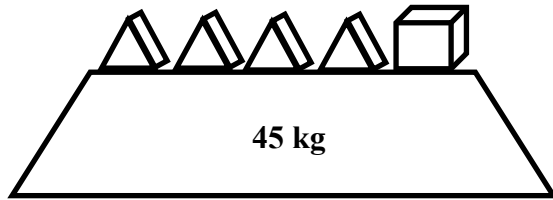
4. Which triangle's perimeter is longer, X or Y? \_\_\_\_\_

How much longer? \_\_\_\_\_ km

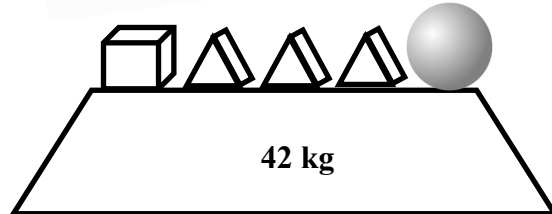


# Shape Stumper

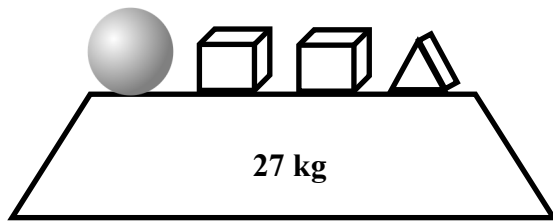
Same shapes have same weights.  
Different shapes have different weights.



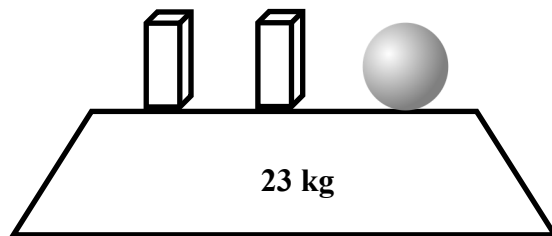
A



B



C



D

How many kilograms?



is = \_\_\_\_ kg



is = \_\_\_\_ kg



is = \_\_\_\_ kg



is = \_\_\_\_ kg

# Probably GREAT

You have a bag of square tiles, one tile for each letter of the alphabet.

Without looking, you pick out 5 letters from the bag. What is the probability that the 5 letters can be arranged to spell the word, GREAT? \_\_\_\_\_



# βαζανός

**Balzano** is a puzzle that will tap into your logical reasoning abilities. Read directions carefully, then try your hand at Balzano Shapes.

**Directions:**





Your job is to figure out the Desired Arrangement (the solution) of three shapes from clues that provide information about the shapes and their locations. The possible shapes are **Circle, Pentagon, Trapezoid, and Triangle**. No shape may be repeated.

The **Arrangement Column** shows sets of shapes in rows. In the Balzano puzzle below, the second row, arranged in order from left to right, is: triangle, pentagon, circle.

**Correct Shape in the Correct Place** identifies the number of elements that are the correct shape AND in the right place. The second row has one shape in the right place.

**Correct Shape in the Wrong Place** identifies the number of correct shapes BUT in the wrong place. There is one of these in the second row.

**Incorrect Shape** identifies the number of shapes that do not belong in the arrangement. There is one of these in the second row.

	Correct Shape/ Correct Place	Correct Shape/ Wrong place	Wrong shape/ Wrong place
	2	0	1
	1	1	1
	0	2	1
	0	2	1
	3	0	0