

NEW MATERIAL

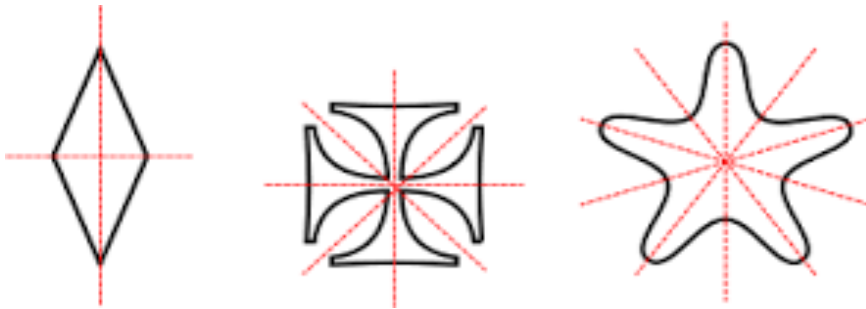
Symmetry.

Symmetry is when one shape becomes exactly like another if you flip, slide or turn it.

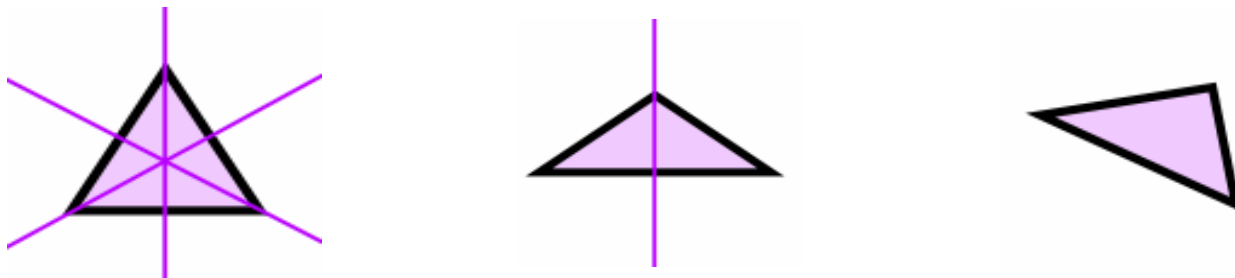
Symmetry: Reflection

Reflection Symmetry (sometimes called Line Symmetry or Mirror Symmetry) is easy to spot, because one half of the shape is the reflection of the other half.

The Line of Symmetry (also called the **Mirror Line**) can be oriented in **any direction**.

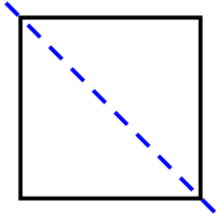


Shapes may have several lines of symmetry, one line of symmetry or none. For example, a **Triangle** can have **3**, or **1** or **no** lines of symmetry:

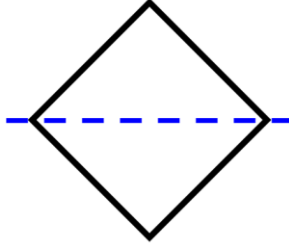


1. a) Is the line drawn a symmetry line for each figure? You can cut out the images and fold them along the dashed line to check.

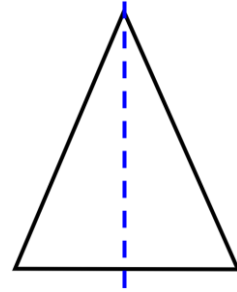
a)



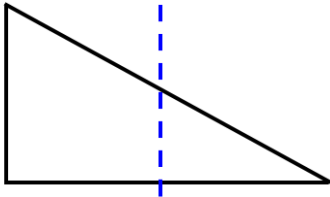
b)



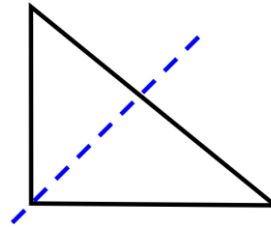
c)



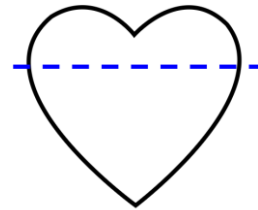
d)



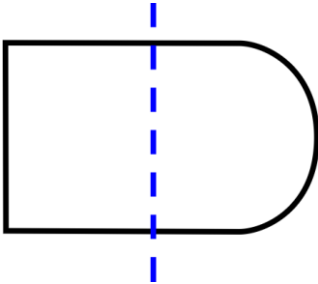
e)



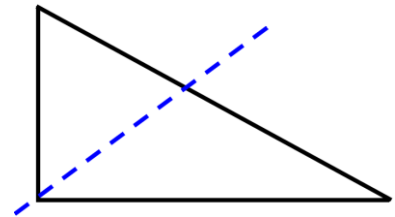
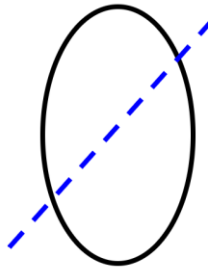
f)



g)

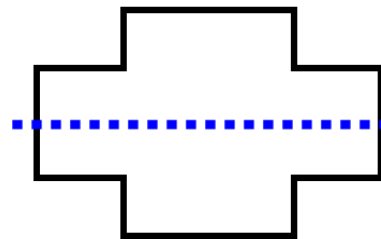
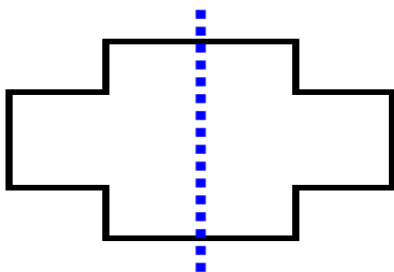


h) i)



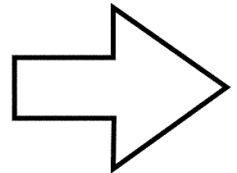
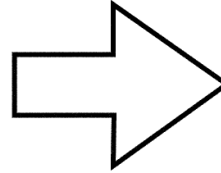
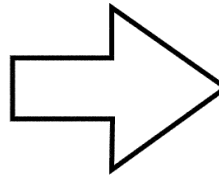
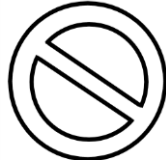
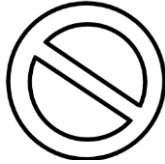
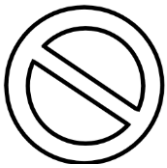
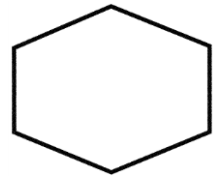
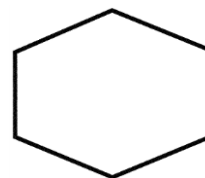
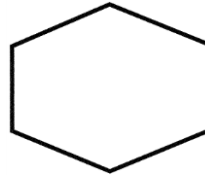
2.

Some shapes you can fold in two different ways so that the sides meet.
The cross-shapes below have *two* different symmetry lines:



3.

Draw as many different symmetry lines as you can into these shapes.



REVIEW

4.

$$12 + 12 + 12 = 12 \times x$$

$$15 + 15 = 15 \times y$$

$$21 + 21 + 21 + 21 = 21 \times q$$

$$x = \underline{\hspace{2cm}}$$

$$y = \underline{\hspace{2cm}}$$

$$q = \underline{\hspace{2cm}}$$

Metric Units of Volume:

A **milliliter** (that is "milli" and "liter" put together) is a very small amount of liquid, like a drop of water.



1000 milliliters makes up 1 **liter**: 1 liter = 1,000 milliliters.



5. a) Chris has 1 liter of water in a jug. On the way to a table he spilled some. He has 780ml left. How much has he lost?

- b) I have 1 liter of sprite. I give 300ml to William, 200ml to Paul and 250ml to Mickey. How much do I have left?

6. Add three digit numbers using an example:

111	222	123	630
+ 111	+ 333	+345	+179
<u>111</u>	<u>444</u>	<u>430</u>	<u>432</u>
333			

7. Solve the problems:

- a) 10 pine trees are growing along a straight road. The distances between neighboring trees are 10 m. How far is the first pine from the last one? Draw a picture if necessary.

- b) During the first three weeks of December Sally borrowed 4 books from the library each week; during the fourth week she borrowed 5 books. How many books did she borrow during December from the library?

- c) Some people have gathered to have dinner. Everyone has two plates except little Hannah, who only has one plate. There are 10 people in addition to Hannah at the dinner. How many plates are on the table?

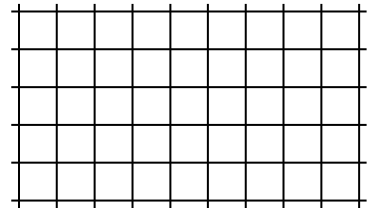
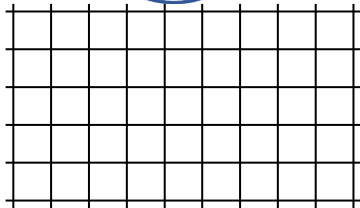
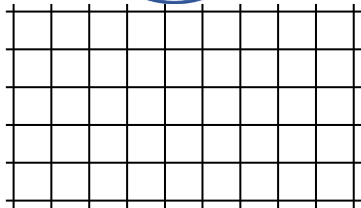
8.

Solve for x using diagrams and check your answer:

a) $x + 201 = 399$

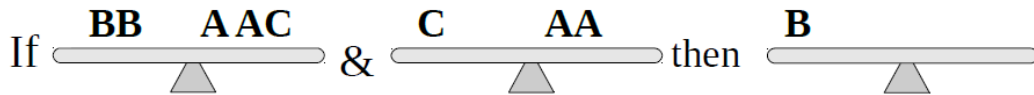
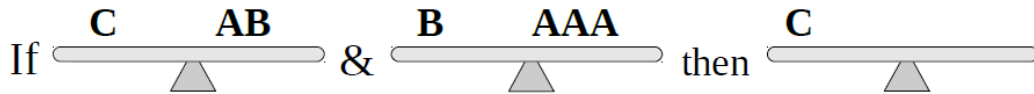
b) $808 - x = 538$

c) $x - 312 = 11$



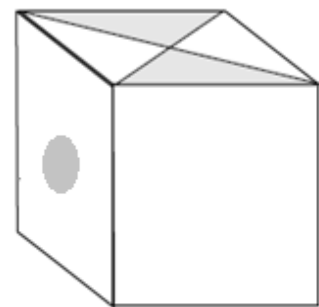
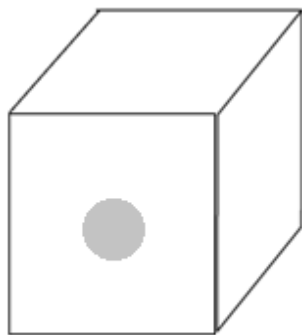
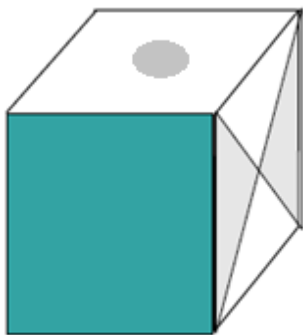
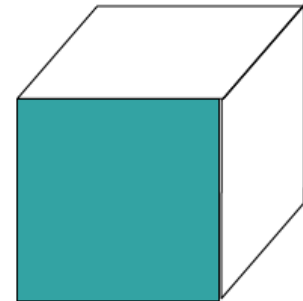
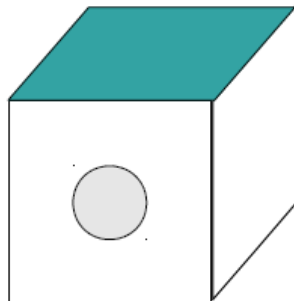
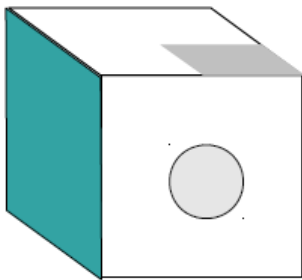
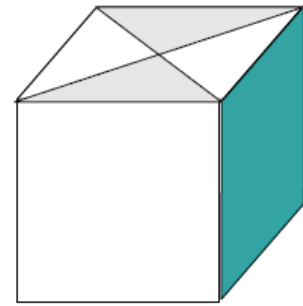
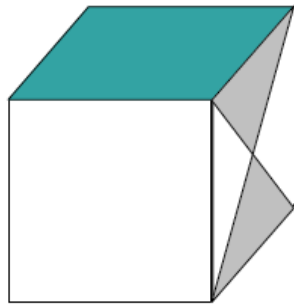
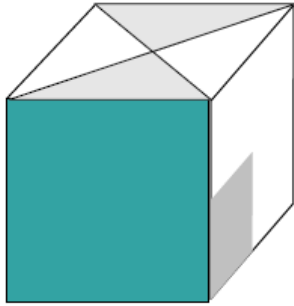
9.

Write only A's to balance each scale:



10.

There are three different cubes. In each row, the same cube is rotated. There are three different patterns on the faces of each cube and each cube had three blank faces. Three faces are shown in each drawing below. Draw the missing patterns.



Did you know ...

Symmetry (from a Greek word *συμμετρία* – *symmetria*) is found everywhere in nature and is also one of the most prevalent themes in art, architecture, and design — in cultures all over the world and throughout human history. Symmetry is certainly one of the most powerful and pervasive concepts in mathematics.

The maths concept of symmetry was derived from nature.

Everything around you is symmetrical and we observe this day in and out, but never put a thought to it.

Just imagine having one eye, one ear, one hand or leg- nothing symmetrical about it!!!
We were created symmetrical.

