**Polygons**

A **polygon** is defined as a two-dimensional closed figure made up of straight line segments connected end-to-end. These segments may not cross (intersect) at any other points.

Below are some examples of polygons.

Shape A below is an example of a **regular polygon** because its sides are all the same length and its angles have equal measure.

* **1-100.** Solve the equations below for *x,* if possible. Be sure to check your solution.
	1. 
	2. (5 − *x*)(2*x* + 3) = 0
	3. 6 − 5(2*x −* 3) = 4*x* + 7
	4. 
* **1-102.** Copy Δ*ABC* below on graph paper.



* 1. Rotate Δ*ABC* 90° counter-clockwise () about the origin to create Δ*A′B′C′*. Name the coordinates of *C′* .
	2. Reflect Δ*ABC* across the vertical line *x* = 1 to create *A″B″C″* .
	3. Translate Δ*ABC* so that *A′″* is at (4, −5). Name the coordinates of *B′″* .
* **1-110.** If no sides of a triangle have the same length, the triangle is called **scalene**. However, if the triangle has two sides that are the same length, the triangle is called **isosceles**. Use the markings in each diagram below to decide if Δ*ABC* is isosceles or scalene. Assume the diagrams are not drawn to scale.

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|   | a.http://textbooks.cpm.org/images/gc/chap01/CPM_Geometry_212.jpg | b.http://textbooks.cpm.org/images/gc/chap01/CPM_Geometry_213.jpg | c.http://textbooks.cpm.org/images/gc/chap01/GC1-110.jpg |

* **1-112.** Without referring to your Shapes Toolkit, see if you can recall the names of each of the shapes below. Then check your answers with definitions from your [Shapes Toolkit](http://www.cpm.org/pdfs/stuRes/GC/chapter_01/GC_1.3.2A.pdf). How did you do?

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| --- | --- | --- | --- |
|   | a. http://textbooks.cpm.org/images/gc/chap01/CPM_Geometry_215.jpg | b. http://textbooks.cpm.org/images/gc/chap01/CPM_Geometry_216.jpg | c. http://textbooks.cpm.org/images/gc/chap01/CPM_Geometry_217.jpg |
|   | d. http://textbooks.cpm.org/images/gc/chap01/GC1-112d.jpg | e. http://textbooks.cpm.org/images/gc/chap01/CPM_Geometry_219.jpg | f. http://textbooks.cpm.org/images/gc/chap01/GC1-112f.jpg |

* **1-114.** Multiple Choice: Which equation below correctly represents the relationship of the sides given in the diagram below?
	1. 3*x* − 2 + 2*x* + 17 = 360°



* 1. 3*x* − 2 + 2*x* + 17 = 180°
	2. 3*x* − 2 + 2*x* + 17 = 90°
	3. 3*x* − 2 = 2*x* + 17