**Unit 8 HW Day 1 8-17, 18, 20, 21**

**Convex and Non-Convex 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.

A polygon is referred to as a **regular polygon** if it is equilateral (all sides have the same length) and equiangular (all interior angles have equal measure). For example, the hexagon shown at right is a regular hexagon because all sides have the same length and each interior angle has the same measure.

A polygon is called **convex** if each pair of interior points can be connected by a segment without leaving the interior of the polygon. See the example of convex and non-convex shapes in problem 8-4.

**8-17.** The exterior angles of a quadrilateral are labeled a, b, c, and d in the diagram below. Find the measures of a, b, c, and d and then find the sum of the exterior angles.



**8-18.** Find the area and perimeter of the shape below. Show all work.



**8-20.** Suzette started to set up a proof to show that if ,  and AF =DC , then . **Examine** her work below. Then complete her missing
 statements and **reasons**. [Hints](http://www.cpm.org/students/homework/GC_Problems/GC_Ch8_Answers/GC8.1.2/GC_8_20.html%22%20%5Co%20%22Java%20Required)⇔[Help](http://www.cpm.org/students/homework/GC_Problems/GC_Ch8_Answers/GC8.1.2/GC_8_20m.html)

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| --- | --- |
| Statement | Reason |
| 1. http://textbooks.cpm.org/images/gc/chap08/BCpEF.gif, http://textbooks.cpm.org/images/gc/chap08/ABpDE.gif and AF =D | 1. |
| 2.  m*http://textbooks.cpm.org/images/gc/chap08/angle.gif*BCF = m*http://textbooks.cpm.org/images/gc/chap08/angle.gif*EFC and m*http://textbooks.cpm.org/images/gc/chap08/angle.gif*EDF = m*http://textbooks.cpm.org/images/gc/chap08/angle.gif*CAB | 2. |
| 3. | 3. Reflexive Property |
| 4.  AF + FC = CD + FC | 4. Additive Property of Equality (adding the same amount to both sides of an equation keeps the equation true) |
| 5.  AC = DF | 5. Segment addition |
| 6. ΔABC ≅ ΔDEF | 6. |
| 7. | 7. ≅ Δs → parts |

**8-21.** **Multiple Choice:** Which equation below is **not** a correct statement based on the information in the diagram?


1. 3*x* + *y* = 180°
2. 2*x −* 1° = 4° − *x*
3. 2*x −* 1° = 5*y −* 10°
4. 2*x −* 1° + 3*x* = 180°
5. None of these is correct