

## SECTION 7.1: ANGLES IN POLYGONS

### Learning Targets

- 7a. Understanding of identifying if a figure is a polygon, determining if convex/concave, and working with regular polygons.
- 7b. Understanding of how to determine the sum of interior angles, each interior angle, and exterior angles.

### Sum of Interior Angles in Polygons

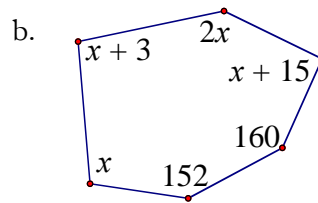
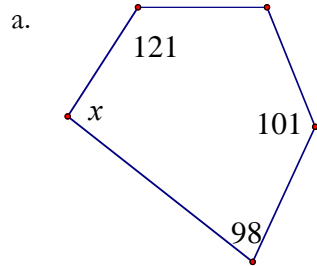
***Examples:*** Find the sum of interior angles for each polygon.

a. Decagon

b. Octagon

c. 15-gon

***Examples:*** Solve for  $x$ .



## Exterior Angles of Polygons

Exterior angles of a polygon have a sum of \_\_\_\_\_

Regular polygons have exterior angles that are \_\_\_\_\_

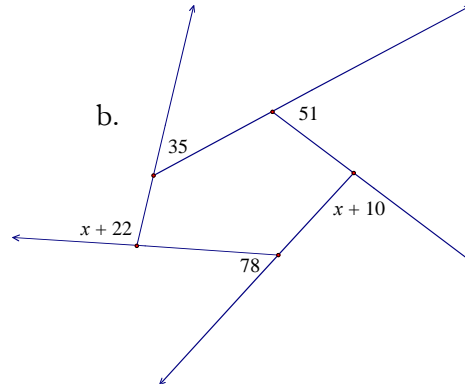
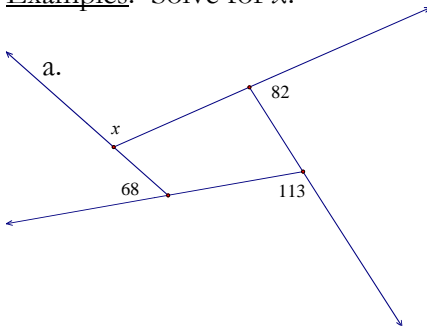
Examples: Find the measure of each exterior angle for the regular polygons.

a. Nonagon

b. Pentagon

c. 20-gon

Examples: Solve for  $x$ .



## Each Interior Angle in Regular Polygons

Examples: Find the measure of each angle measure in the regular polygon.

a. Heptagon

b. Dodecagon

c. 25-gon

Examples: Find the number of sides of the regular polygon with the given interior angle measure.

a.  $150^\circ$

b.  $163.64^\circ$

### Extra Possible Problems

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### Activities for Lesson

- Polygon Investigation – Give all the shapes, they cut out, name, and draw diagonals

### Possible Assignments

- Page 364 (3-30)
- Polygon Crossword & Word Search
- Practice 6.1 (old text)...lots of problems and good
- Practice 7.1A & B (edited)
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