

Def: **symmetry of the plane** - any rigid motion of the plane that moves all points of the figure back to points of the figure.

Def: A figure has **reflection symmetry (or line symmetry or bilateral symmetry)** if a reflection across some line is a symmetry of the figure.

Def: The line of reflection is called a **line of symmetry or mirror line**.

Example 13.8 - Identifying Lines of Symmetry

Def: A figure has **rotation symmetry (or turn symmetry)** if the figure is superimposed on itself when it is rotated through an angle between 0° and 360° .

Def: The center of the turn is called the **center of rotation**. ($90^\circ, 72^\circ, 45^\circ, 180^\circ$)

◆ It is customary to give the *smallest* possible angle measure that turns the figure onto itself.

Def: Figures composed of concentric circles, which turn onto themselves after *any* turn about their center have **circular symmetry**.

Example 13.9 - Finding Angles of Rotation Symmetry (a) 60° , b) 180° , c) 40° , d) circular)

Def: A figure has **point symmetry** if it has 180° rotation symmetry about some point.

Example 13.10 - Identifying Point Symmetry

Def: A **periodic pattern** is a figure with translation symmetry.

Examples include borders and wallpaper.

Homework 8 (due 4/13/10):

- Section 13.1 # 2b, 3b, 4, 5a, 9, 10, 11, 15
- Section 13.2 # 6, 9, 13, 43