Glossary

absolute coordinates Coordinate values based on the origin of a coordinate system, so that a point in two dimensions is identified by an *x* value, giving the horizontal distance from the point of origin of the coordinate system, and a *y* value, giving the vertical distance from the same point of origin.

acquired point An object snap point identified and highlighted in **Object Snap** tracking mode.

alignment path A dotted line used as a visual and snap aid, constructed through an acquired object snap point and extending to the edge of the drawing window horizontally or vertically.

annotative In AutoCAD, text and dimensions with the **Annotative** property can be automatically scaled to match the scale of the viewports on a drawing layout.

ANSI standard Any one of many guidelines and standards created and promulgated by the American National Standards Institute.

application menu Menu that opens in a window by clicking the A on the left side of the application title bar.

array A circular or rectangular pattern of objects.

associative dimension A dimension that is associated with the object it dimensions, so that if the object moves or changes size, the dimension changes with the object.

attribute In AutoCAD, a value that can be attached to a block definition to provide textual or numeric information about an individual block reference.

AutoComplete The process by which AutoCAD displays a list of possible commands after the user has entered only the first few letters. This allows the user to select from the list without typing in the remaining letters.

AutoCorrect The process by which AutoCAD displays a list of possible commands based on the characters entered, even though there may be no command with the sequence of characters typed after the user has entered only the first few letters. This may allow the user to select the correct command from the list without retyping the entry.

Auto-hide A feature of AutoCAD palettes that allows them to collapse so that only the title bar appears when the palette is open but not in use.

block A set of objects defined as a single named object and saved so that it can be scaled and inserted repeatedly and potentially passed on to other drawings.

Boolean operations Logical operations, such as union, subtraction, and intersection, based on the mathematical ideas of George Boole, that delineate how simple solid shapes can be combined to construct composite solid objects.

Cartesian coordinate system Based on the concept first described by René Descartes in 1637, a geometric system in which any point on a plane can be identified by values representing its distance from two mutually perpendicular axes.

chamfer An angle cut across the corner of an object.

constraint bar A small square or set of squares that AutoCAD places next to an object to which a constraint has been applied. Each type of constraint has its own icon that is displayed in the square.

constructive solid geometry A system of three-dimensional modeling that represents solid objects as composites made by combining basic shapes, called *primitives.*

contextual tab A ribbon tab that opens automatically when a certain command is started or an object is selected. For example, the **Array** tab opens when a previously drawn array is selected.

crossing window A selection window that is defined from right to left. Everything within the window is selected, along with anything that crosses the window.

customization (CUIx) file File used to define and store element definitions that make up specific user interfaces within the AutoCAD application window. These user interface elements include ribbon tabs and panels, **Quick Access** toolbar, shortcut menus, and "legacy" toolbars and menus.

DesignCenter In AutoCAD, a palette that provides access to content in open or closed drawings in local or remote locations.

dimension style A set of dimension variable settings that control the text and geometry of all types of AutoCAD dimensions.

dimensional constraint A value or expression that limits the length and position of an object in a drawing. Dimensional constraints appear in the drawing area similar to standard dimensions but are not plotted.

dwt The file extension given to AutoCAD drawing template files.

dynamic block A block defined with variable parameters that can be specified in any individual block reference.

dynamic input display A display of coordinate values, lengths, angles, and prompts that moves with the mouse cursor and changes with the action being taken.

dynamic user coordinate system (DUCS) In AutoCAD, the 3D system that creates a temporary user coordinate system aligned with the face of a 3D object.

external reference In AutoCAD, a reference that points to a drawing that is not in the database of the current drawing. Objects of the external reference are available within the current drawing but are maintained in an external drawing database and file.

extruding A method of creating a three-dimensional object by projecting a two-dimensional object along a straight path in the third dimension.

fillet In drafting practice, a concave curve at the corner of an object. In AutoCAD, the term *fillet* and the **FILLET** command refer to both concave and convex curves (rounds).

frustum cone A cone that does not rise to a point. It has a bottom radius and a top radius and is therefore flat topped.

geometric constraint A property that limits the placement and size of an object in a drawing through specification of its relationship to other objects or to its geometric environment.

gizmo In AutoCAD 3D modeling, one of three coordinate system icons that facilitate editing of solid models. The three gizmos are for moving, rotating, and scaling objects.

gradient In AutoCAD, a fill pattern in which there is a smooth transition between one color or tint and another color or tint.

grip In AutoCAD, grips are placed at strategic geometric locations on objects in a drawing that have been selected. Several forms of editing can be accomplished by picking, dragging, and manipulating grips.

group A set of objects defined as a single entity that can be selected, named, and manipulated collectively.

hardware acceleration AutoCAD uses hardware acceleration to improve performance by reducing the time it takes to complete graphical operations. **Hardware Acceleration** is on by default and should be left on unless it creates other problems on your computer.

heads-up design Software designed to allow the user to remain focused in the main editing area of an application.

in-canvas property preview A feature that allows the user to see the effect that changing a property will have prior to actually making the property change.

isocircle The elliptical representation of a circle in an isometric drawing.

isoplane One of three planes used for isometric drawing. In AutoCAD, these planes are named left, right, and top.

lasso A series of connected line segments that, together with the rubber band, cross or completely surround objects on the screen. Objects crossed or surrounded are selected, depending on the direction of the starting segment.

layer In CAD practice, a layer is defined with colors, linetypes, and lineweights so that objects of a certain type can be grouped together and treated separately from other types of objects.

layout A 2D representation of what a drawing will look like when plotted. Layouts are created in paper space, with viewports in which objects drawn in model space can be positioned and scaled for plotting.

limits In AutoCAD, two points that define the outer boundaries of the drawing area in a given drawing. The points are defined by ordered pairs in a Cartesian coordinate system, with the first point being the lower-left corner and the second being the upper-right corner of a rectangular space.

linetype scale A value that determines the size and spacing of linetype dashes and gaps between them.

lineweight A value that specifies the width at which a line will be displayed on screen or in a plotted drawing.

menu bar A set of drop-down menus that are opened from labels displayed horizontally in a bar that appears below the title bar and above the ribbon. By default, the menu bar is not displayed. It can be displayed from the **Customize** menu on the **Quick Access** toolbar.

mesh modeling A 3D modeling system in which 3D mesh objects are created with faces that can be split, creased, refined, moved, and smoothed to create realistic free-form models.

Midstring AutoComplete The process by which AutoCAD displays a list of possible commands containing the characters entered at the command line, including options where the characters do not appear at the beginning of the option.

model space The full-scale drawing space, where one unit of length represents one unit of length in real space.

multifunctional grip A grip that can be used to edit objects in multiple ways. When a multifunctional grip is highlighted, AutoCAD displays a menu of possible editing modes from which to choose.

multileader In AutoCAD, an object with one or more arrowheads and leaders connecting annotation text or symbols to annotated objects.

noun/verb The selection method in which an object to be edited is selected prior to starting an edit command.

object selection window An area between two points specifying opposite corners of a rectangle. Objects completely within the window are selected for editing.

object snap A snap mode that locates a geometrically definable point on a previously drawn object, such as the midpoint or endpoint of a line.

ordinate dimension A dimension given relative to a fixed point of origin rather than through direct measurement of the objects being dimensioned.

orthographic view One of six standard views in which the observer's point of view is normal to the front, back, left, right, top, or bottom plane of the drawing.

page setup A group of plot settings applied to model space or drawing layouts that are named and saved. Page setups can be applied to drawings other than the one in which they are created.

paper space Use of a drawing space to represent objects on a drawing layout at the scale of the intended drawing sheet.

parallel projection Three-dimensional representation of objects along parallel lines so that distance values are maintained regardless of the viewer's perspective.

parameter A value that can be varied from one representation of an object to another.

parametric design The set of processes involved in creating design drawings based on defined relationships and related dimensional values among aspects of a design. Typically, drawings created in this manner can be altered and adjusted when parameter values change.

path array An array created by copying objects repeatedly at regular intervals along a selected linear or curved path.

perspective projection Three-dimensional representation of objects along lines that converge at a distant vanishing point.

point acquisition The process by which object snap points are acquired for use in object snap tracking. An acquired point is marked by a small green cross.

point filter A system for specifying a point by first filtering one or two coordinate values from a given point and then specifying the other value(s) independently.

polar coordinates Coordinates that identify a point by giving a distance and an angle from a previous point.

polar tracking The AutoCAD feature that displays tracking lines at a regular specified angle.

polyline A two-dimensional object made of lines and arcs that may have varying widths.

polysolid A 3D object similar to a 2D polyline, but with the dimension of height added along with width and length.

properties Characteristics of an object that determine how and where an object is shown in a drawing. Some properties are common to all objects (layer, color, linetype, or lineweight), whereas others apply only to a particular type of object (radius of a circle or endpoint of a line).

quadrant A point on an object along one of the orthogonal axes, at 0°, 90°, 180°, or 270° from a given point, or the area enclosed between any two adjacent axes.

Quick Access toolbar A standard set of seven or more tool buttons located on the title bar at the top of the application window, to the right of the application menu button.

regeneration The process through which AutoCAD refreshes the drawing display by re-calculating objects from the numerical database used to store the geometry of the drawing.

relative coordinates Coordinates given relative to a previously entered point, rather than to the axes of origin of a coordinate system.

rendering The process by which the mathematical data used to describe a solid model are combined with lighting and materials to generate a realistic-looking image of the 3D model.

revision cloud A closed object made of many small arcs typically used to surround an area in a drawing to indicate that it has been or needs to be edited.

ribbon The set of tabs, panels, and tool buttons located below the title bar and above the drawing area. The ribbon gives access to many commands and features. Panels and tabs change depending on the workspace.

rollover highlighting A feature that causes geometry in the drawing area to be highlighted when the pickbox passes over it. This is a visual aid in object selection.

round In drafting practice, a convex curve at the corner of an object.

snap One of a number of CAD features that facilitate accurate drawing technique by allowing the software to extrapolate a precise geometric point from an approximate cursor location.

solid modeling A system of creating 3D objects from combinations of 3D solid primitive objects.

spline A smooth curve passing through or near a specified set of points according to a mathematical formula.

status bar A set of tool buttons located below the command line window and above the Windows taskbar, beginning with the **Model** and **Layout** tabs on the left and ending with the **Customization** button on the right.

subobject In AutoCAD 3D modeling, a face, edge, or vertex that can be independently selected for editing.

tangent A line running perpendicular to the radius of a circle and touching at only one point, or the point where the line and circle touch.

template A drawing used as a starting point for creating new drawings; a drawing that contains previously defined settings.

tiled viewports Viewports that cover the drawing area and do not overlap. Tiled viewports may show objects from different points of view but are not plotted.

tool palette A collection of tools in a tabbed format.

tooltip A window that opens automatically when the cursor rests on a tool button. Basic tooltips provide a label and a general description. Extended tooltips provide more information and an illustration.

trace An overlay to a drawing that allows for design collaboration by adding comments and markups without making changes to the objects of the drawing.

transparency Drawing objects have a property named transparency that can be adjusted on a scale from 0 to 90, where 0 is solid and 90 is extremely faint. Display of transparency can be turned on or off for a whole drawing using the **Transparency** button on the status bar, which is available from the **Customization** menu.

verb/noun The selection method in which an edit command is started prior to objects being selected for editing.

ViewCube In AutoCAD, an icon representing standard orthographic and isometric viewpoints, used to change viewpoints in a 3D drawing or viewport.

viewpoint The point in space from which a three-dimensional object is viewed.

wireframe model A three-dimensional model that represents only the edges and boundaries of objects.

workspace An initial drawing setup with a set of palettes, ribbon tabs and panels, and a **Quick Access** toolbar grouped together to facilitate work on a particular type of drawing. Custom workspaces can be created.

world coordinate system In AutoCAD, the default coordinate system in which the point of origin is at the intersection of the default *X*-, *Y*-, and *Z*-axes. All user coordinate systems are defined relative to the world coordinate system.

xref Short for external reference.