

BASIC TECHNOLOGY ASSIGNMENT

1. WHAT IS ORTHOGRAPHIC PROJECTION

1 Orthographic projection (also **orthogonal projection** and **analemma**) is a means of representing three-dimensional objects in two dimensions. Orthographic projection is a form of parallel projection in which all the projection lines are orthogonal to the projection plane, resulting in every plane of the scene appearing in affine transformation on the viewing surface. The obverse of an orthographic projection is an oblique projection, which is a parallel projection in which the projection lines are *not* orthogonal to the projection plane.

1b MENTION THREE (3) PRINCIPAL VIEWS IN ORTHOGRAPHIC PROJECTION

1 isometric projection, the most commonly used form of axonometric projection in engineering drawing, the direction of viewing is such that the three axes of space appear equally foreshortened, and there is a common angle of 120° between them. As the distortion caused by foreshortening is uniform, the proportionality between lengths is preserved, and the axes share a common scale; this eases one's ability to take measurements directly from the drawing. Another advantage is that 120° angles are easily constructed using only a compass and straightedge.

2 Dimetric projection, the direction of viewing is such that two of the three axes of space appear equally foreshortened, of which the attendant scale and angles of presentation are determined according to the angle of viewing; the scale of the third direction is determined separately. Dimensional approximations are common in dimetric drawings.

3 multiview projection, up to six pictures of an object are produced, called *primary views*, with each projection plane parallel to one of the coordinate axes of the object. The views are positioned relative to each other according to either of two schemes: *first-angle* or *third-angle* projection. In each, the appearances of views may be thought of as being *projected* onto planes that form a six-sided box around the object. Although six different sides can be drawn, usually three views of a drawing give enough information to make a three-dimensional object. These views are known as front view (also *elevation*), top view (also *plan*) and end view (also *section*).

2a DEFINE ONE POINT PERSPECTIVE

One point perspective is a **drawing method that shows how things appear to get smaller as they get further away, converging towards a single 'vanishing point' on the horizon line**. It is a way of drawing objects upon a flat piece of paper (or other drawing surface) so that they look three-dimensional and realistic.

2b DRAW A CUBE IN ONE POINT PERSPECTIVE



