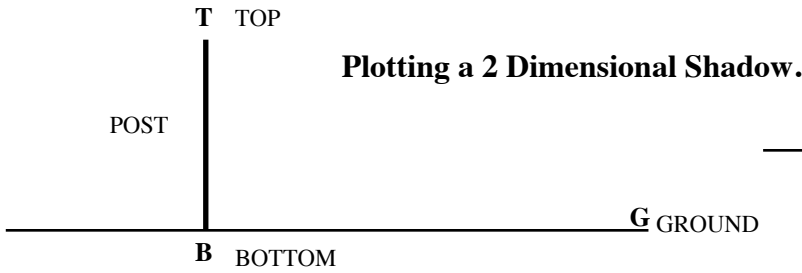# Plotting Shadows

(L) LIGHT

Plotting a 2 Dimensional Shadow.

T   TOP

POST

G GROUND

B   BOTTOM

STEP 1: Establish the following arbitrary items.
 a. Ground line. b. Post. c. Light Source.
Label each point according to the above diagram.

The length of the
shadow runs from
point (B) to point (X)

L

T

POST

B   X   G
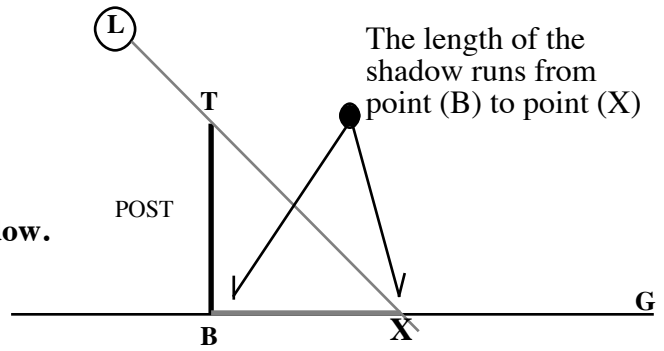
STEP 2: Draw a line from the **L**ight source thru **T**op
of post; another from **G**round thru **B**ottom of post.
Where the two lines meet is **X**. Line **BX** is the length
of the shadow.   ·

Plotting A 3 Dimensional Shadow

Translating a 2D plot into a 3D plot requires an
additional plot. If a form exists on a 3 dimensional
plane, unlike the 2D one above, both the form and
the light source must be set in a 3D space. Visualiz-
ing it in a box might make the concept clearer.
Note: In the 3D plot, the light has a base point. This
was not required in the 2D plot, because the light was
glued to a flat surface. Point B establishes that the light
is not only to the left of the post, but behind it as
well. All of the items have been arbitrarily placed.
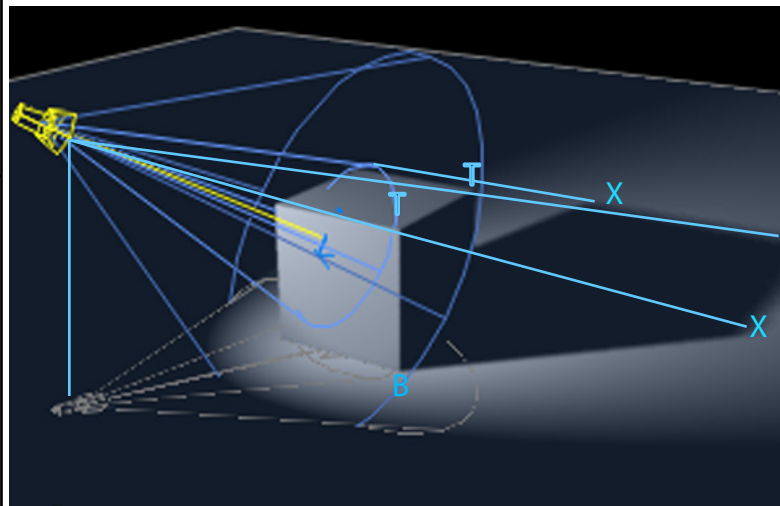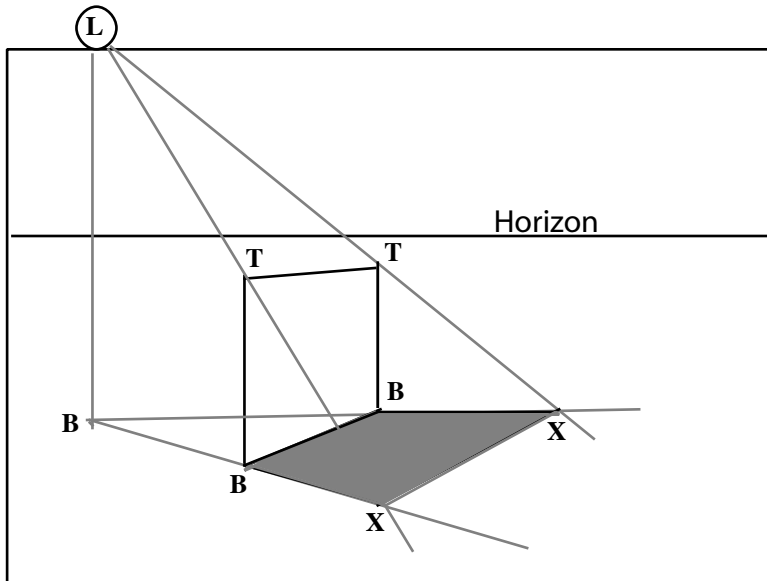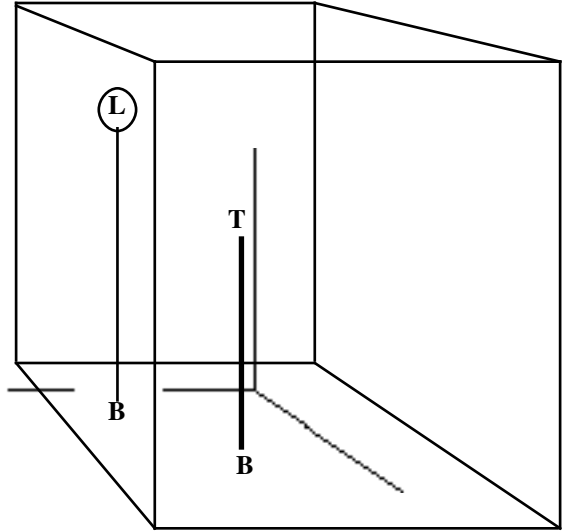
Some Exercises: Using the preceding plots as examples,
draw several more, changing the positions of the light.
Step 1. Following the same steps as those used in
a 2D plot, draw a line from (L) through T until it passes
somewhere below the box.
Step 2. Connect both (Bs) with a straight line and carry
this line out to the right until it meets line (LT). Point X
is the spot where these two lines meet. The line from the
(B) or bottom of the pole to X is the length and direction
of the shadow.

Next, construct a cube and plot its cast shadow.
*Note: In the illustration on the left, the
shadow of a wall is plotted. If each end is
viewed as a post, with a Top (T) and Bottom
(B), the two X points are found. Simply
join the X points and the shape of the cast
shadow is revealed.*