MANY PLANES

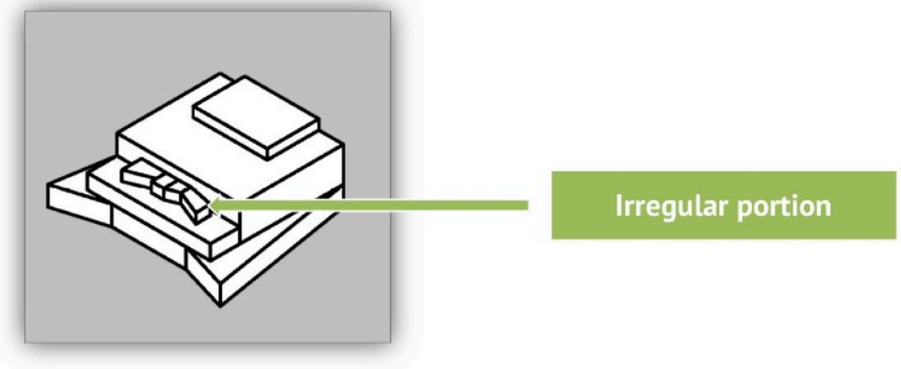
- Irregularity and large # of planes are designed to overwhelm you
- Keyhole shapes are ultimately very simple
- Details are sometimes included

DEFINITION

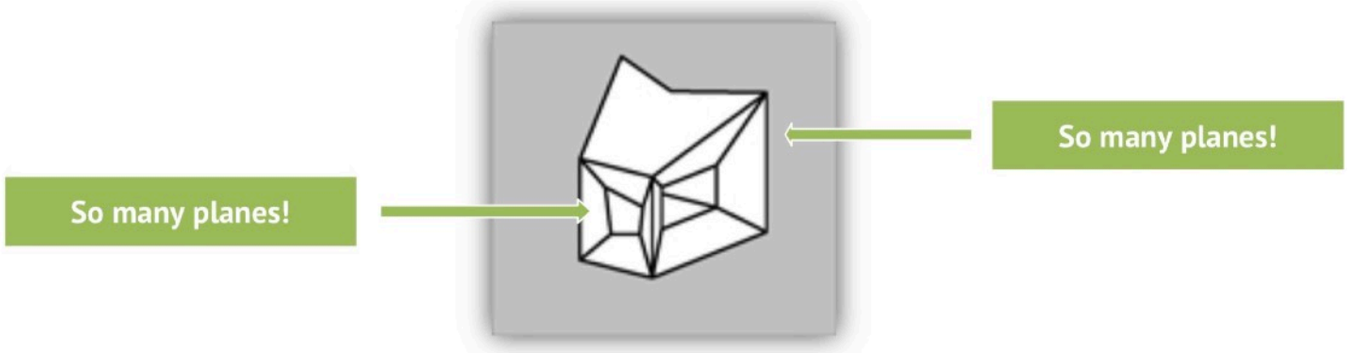
Another self-explanatory category, this type of model is characterized by the large number of planes on the model. At first glance, most of these objects will seem like "giant, unwieldy rocks" because they are very irregular! (easier problems have symmetric pieces around the irregular portion). Nonetheless, these problems are simply testing your perception on planes and the angular differences between planes. Usually 1-2 problems per exam.

BREAKDOWN OF SHAPE? TRICKS?

Because these shapes are rather irregular, it's difficult to characterize how they are made since they can really take on any shape! So we'll go through a few shapes and break down the points stated in the header above. This shape is rather symmetric except for one irregular portion. Really, though, the irregular portion does very little to the keyhole (specifically the side/end keyhole). Its irregularity is a psychological trick to overwhelm you!

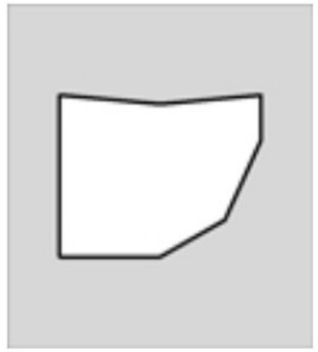
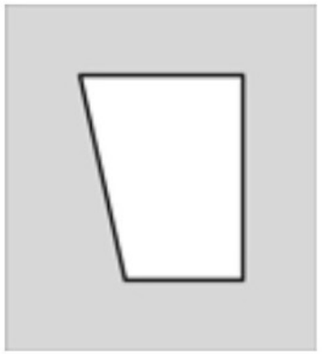
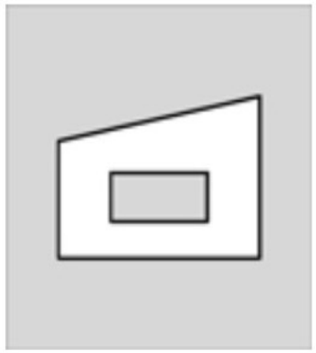


This second shape has so many planes, but notice how most/all of the planes are caving into the object. What does that do to the keyhole for any of these views - practically nothing! They end up being another psychological trick to overwhelm your senses. In fact, you may be so concerned with these concaved planes that you might be missing some other details (see below).



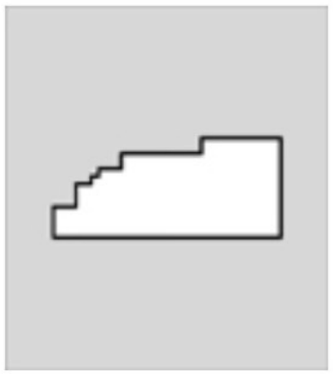
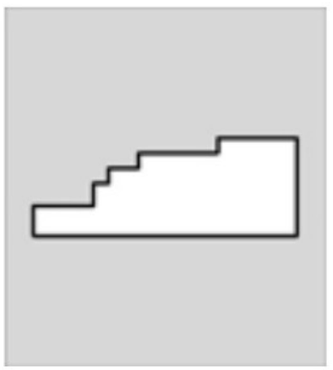
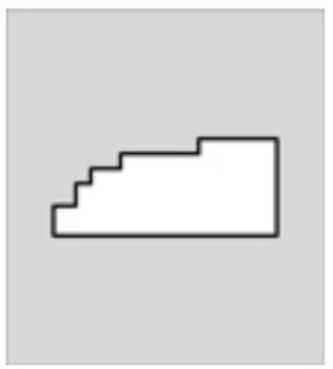
1. CONCAVED PLANES

Planes-on-planes-on-planes. What to do? Don't let it get to you! Let's look at an example with the SIDE/END view:

			
EXPLANATION	**Uh... what is that?! Not the answer! Don't let all those concaved planes scare you into thinking that keyhole should be irregular as well. Follow the outline of the shape. It's a very simple keyhole shape indeed!**	**I've included this tricky answer because you might be so hung up on those planes, you might have missed one detail which will change the entire shape of the keyhole! Do you see the line going into the center of the keyhole. That indicates a hole!**	**Correct! You've beaten this psychological test of wits.**

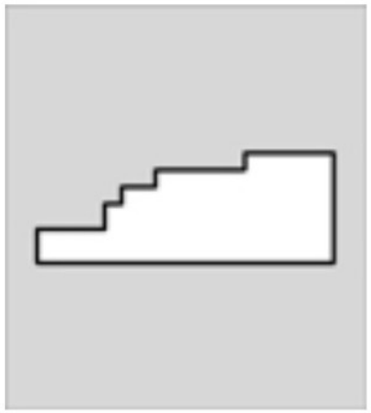
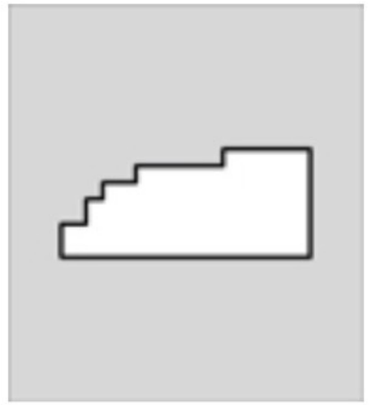
2. IRREGULAR SHAPES / “ROCKS”

Irregular objects usually are a test of planarity and overlap. Looks like a rock? Let’s bust it. Let’s look at an example with the SIDE/END view:

			
EXPLANATION	**Don’t let that irregular bar in the center fool you! It’s really just one more level to this staircase-like keyhole!**	**We’ve included this tricky answer because you might be so hung up on the irregular object. Look at the bottom left of the keyhole. That extension is much too long. Just a proportion error.**	**Correct! You’ve beaten this psychological test of wits.**

3. PROPORTIONS

An element of the keyhole is too wide/thin, long/short, angled incorrectly to reflect the proportionality of the 3D model. An example with the SIDE/END view:

		
EXPLANATION	**Look at the bottom left of the keyhole. That extension is much too long! Just a simple proportion error.**	**Correct! The extension is of the correct length.**