

Name _____

Laboratory for Shape and Depth/Distance Perception

1. Pictorial Depth Cues [Monocular Cues]

a.

Depth Cue	Where it appears in the painting

What time of day might be depicted in the painting and what cues did you use to make that judgment?

If you were actually seeing this scene, how far would you be from the man and woman (in feet or meters) and what cues did you use to determine the distance?

b.

Misperception	Cause of the Misperception

In the last lab, you provided a potential explanation for how one might be able to see impossible figures. Now that you've studied pictorial cues to distance/depth, how would you explain the ability to create such impossible figures?

2. Shape/Depth from Shading [Monocular Cue]

a. Describe your perceptual experience of the shadow illustration...especially regarding depth. What seem to be the crucial determinants of your experience of depth?

b. How can you explain the distinctly different perception of depth in this illustration?

c. How does your experience of depth differ from that in b? Can you see how organizing principles can give rise to the perception of shape here?

d. How does the shadow affect the perceived motion of the ball?

e. What is the apparent motion of the faces? What happens to the perceived depth as they rotate?

3. Shape/Depth from Motion [Monocular Cue]

Based on the demonstrations, how do you think that motion gives rise to depth perception? How important a cue to depth/shape is motion? What other factors (color, luminance difference, speed, etc.) seem to be important to the sense of depth that emerges?

4. Binocular Cues to Depth and SIRDS

Below, provide me with your own interpretation of how SIRDS work:

5. Depth/Size Illusions

a. Provide a brief description of the principles that underlie the Ponzo illusion.

b. How is the Müller-Lyer illusion similar to the Ponzo illusion?

c. What sort of explanation might you provide for the Müller-Lyer illusion, particularly the barbell variant of the illusion?

d. How would you explain the Banana Card (or Banana & Pepper) illusion?

e. How would you explain the Breathing Square (or Triangle) illusion?

f. How would you explain the Pyramid illusion? What other illusions are similar to this one?

6. Memory for Distance

a. Do you have a fairly good mental map of campus? Can you determine the distance between various buildings?

How far is it from the college center to the library?	
How far is it from the library to the building housing the psychology department?	

c. Can you remember which characters populated the island? For each of the cartoon characters seen on the web site, indicate if they were on the original map by circling "Old" for the ones that you think were on the map.

Cartoon Character	Judgment	Cartoon Character	Judgment
1.	Old / New	13.	Old / New
2.	Old / New	14.	Old / New
3.	Old / New	15.	Old / New
4.	Old / New	16.	Old / New
5.	Old / New	17.	Old / New
6.	Old / New	18.	Old / New
7.	Old / New	19.	Old / New
8.	Old / New	20.	Old / New
9.	Old / New	21.	Old / New
10.	Old / New	22.	Old / New
11.	Old / New	23.	Old / New
12.	Old / New	24.	Old / New

What was your proportion Hits (number correctly remembered / 24)?

Judging Relative Distances

Using the four sets of two pairs of cartoon characters found on the web page, judge which of the two pairs was closer together on the original map by circling your choice on the response sheet below.

Number	Closer Pair
1.	Pair 1 / Pair 2
2.	Pair 1 / Pair 2
3.	Pair 1 / Pair 2
4.	Pair 1 / Pair 2

Judging Absolute Distances

For each of the four cartoon character pairs seen on the web page, using only your memory, judge how far apart the two characters were on the original map (using inches or centimeters).

Number	Distance
1.	
2.	
3.	
4.	

Once you're done with your judgments, you can look on the web page to find the correct answers for your judgments of relative distances. Given the variability in monitor sizes, you'll need to actually measure the distances yourself in order to assess your performance on the judgment of absolute distances.

Below, indicate how accurate you were and what you think your performance tells you about your ability to maintain a mental map and then use that map to judge distances.

b. Finally, answer the following questions about the story that you read on the web page (Jefferson Plaza Hotel).

1. What is above your head?	
2. What is below your feet?	
3. What is ahead of you?	
4. What is behind you?	
5. What is to your right?	

In the space below, describe what these two exercises tell you about the mental representation of space/distance.
