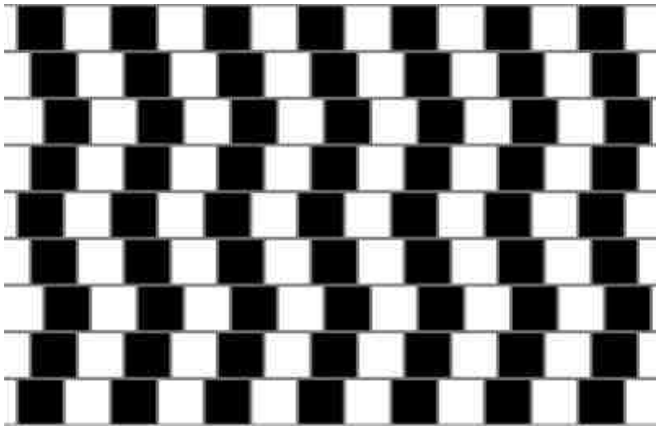
Name: _____ Date: _____

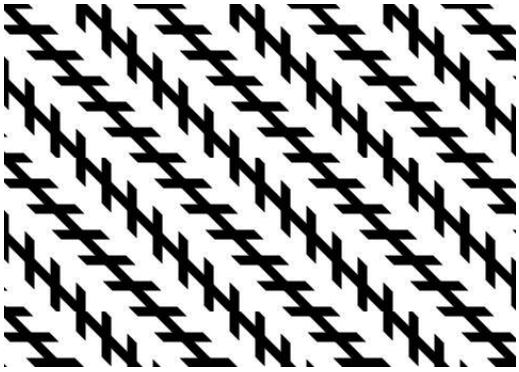
For each of the following images, make a conjecture:

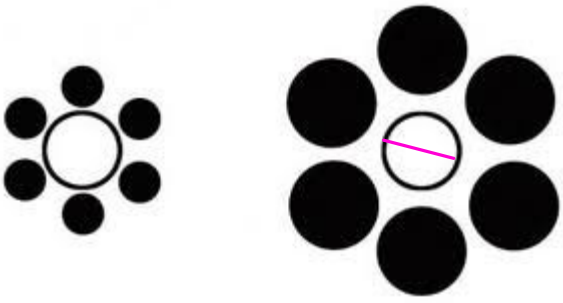
- guitar player
- cup
- old people

↑ The same.



- macro vs. micro





The centres are the same size despite appearances.

Are your conjectures correct? How can you check (validate) them?

Assignment p. 17 #1-3
p. 22 #1, 4, 5, 11, 12 ,16

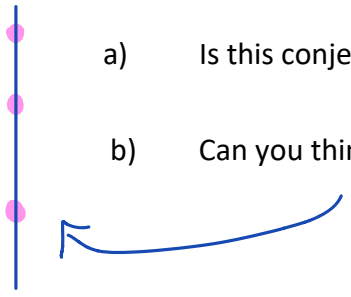
Conjectures

Theories or opinions based on incomplete information

Counterexamples

The one example that can prove a conjecture to be incorrect.

Example After seeing a number of triangles, Jeff conjectures that any three points make up a triangle.



a) Is this conjecture always true? No

b) Can you think of a counterexample to prove this conjecture wrong?

- all the points could be in a line
- they could all be the same point.

Example Find the difference between consecutive perfect squares and make a conjecture.

0, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100

1, 3, 5, 7, 9, 11, 13

a) Is it possible that one pattern can give more than one conjecture?

it will be an odd number

b) Can you find a counterexample to one of the conjectures above?

nope!

Example Jana observes the following pattern: 3+5=8, 7+13=20, 5+11=16, 13+17=30 and makes the conjecture "The addition of two prime numbers always equals an even number."

a) Find a counterexample that proves the conjecture false.

$2+3=5$

b) Revise the conjecture so that it is harder to disprove.

The addition of 2 prime numbers that are larger than 2 always equal an even number.

Assignment p. 17 #1-3
p. 22 #1, 4, 5, 11, 12 ,16