2 Exploring the Validity of Conjectures (1.2)

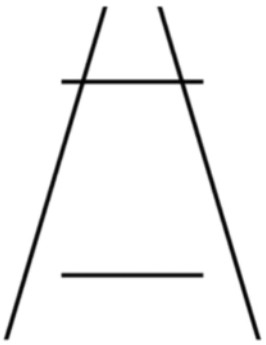
January 3, 2020 5:58 PM

Day 2: Exploring the Validity of Conjectures (1.2)

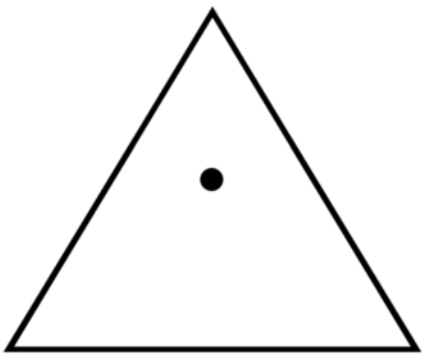
A conjecture is made through observing examples.

Even if you have multiple examples of a conjecture being true, all you need to prove the conjecture is not true is one false example (counterexample!

On your first impression…

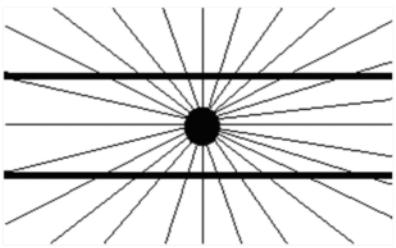


Make a conjecture about the horizontal lines.

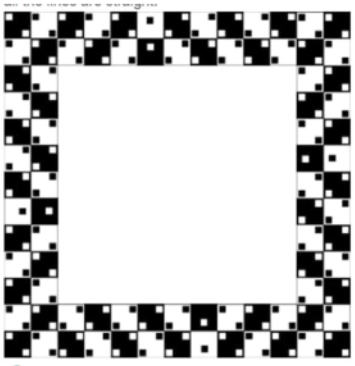


Make a conjecture about the dot (is it halfway down the triangle?)

Look at the Sun. Are these lines Parallel? or Are they Curved?



Make a conjecture about the dark lines.



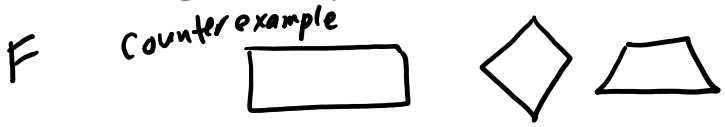
Make a conjecture about the squares and lines.

Examples:

Are the following conjectures valid? If not, find a counterexample. (True / False)

a) All four-sided figures are squares.

F Counterexample



b) All birds can fly.

F penguin chickens flamingos kiwis ostriches

c) Division decreases the number. For example, 12 ÷ 4 =3 and 3 is less than 12.

F
- $12 \div 1 = 12$
- $2 \div 0.14 = 14.28$

d) If a number is divisible (dividing whole numbers that produces another whole number) by 2, then it is divisible by 4.

F
- $30 \div 2 = 15$
- $30 \div 4 = 7$ rem 2

e) If a number is divisible by 9, then it is divisible by 3.

T $\frac{n}{9} = \frac{n}{3.3}$

f) If the sum (add) of 2 numbers is negative, then both the numbers are negative.

F $-6 + 4 = -2$

g) If I live in Vancouver (Canada), then I live in British Columbia.

T

h) If I live in British Columbia, then I live in Vancouver (Canada).

F Victoria, Prince George, Burnaby