

2.1: To make conjectures based on inductive reasoning. To find counterexamples to false conjectures.

Homework Sec 2.1 #31-45, 51

Inductive Reasoning: Is reasoning that uses a number of specific examples to arrive at a conclusion.

When you assume that a pattern will continue, you are applying inductive reasoning.

Conjecture: is the conclusion you draw based on using inductive reasoning.

* LOOK AT the PATTERN & DRAW A CONCLUSION THAT IS CALLED YOUR CONJECTURE. YOU NEED TO WRITE IT!

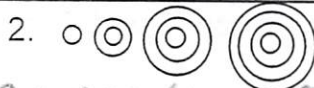
* 2.1: To make conjectures based on inductive reasoning. To find counterexamples to false conjectures. *

Write a conjecture to describe the pattern in each sequence. Then use it to find the next term.

$12(3+1)$
 $12(4) = 48$
 2
 1
 $2(n+1) = 4$
 $2(2)$
 $4(2+1) = 12$
 $4 \cdot 3$
 $2+2=4$
 $4+8=12$
 $10+12=22$
 $-3+3=0$
 $-4+4=0$

1. Cost: \$4.50, \$6.75, \$9.00

\$2.25 IS ADDED TO THE PREVIOUS TERM; 11.25



AN ADDITIONAL CIRCLE IS ADDED AROUND THE LAST ONE ON THE PREVIOUS TERM

3. 2, 4, 12, 48, 240

the n^{th} term multiplied by the number $n+1$

4. the sum of two even numbers. (Here you have to practice the pattern and make a conjecture).

IS AN EVEN NUMBER

5. the relationship between a and b if $a+b=0$

a & b ARE OPPOSITES OF EACH OTHER

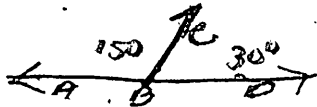
Practice: 3-11 odd pg: 94-95

To make conjectures based on inductive reasoning.
 To find counterexamples to false conjectures.

Give a conjecture determine if it is true or false and give a counter example if it is false.

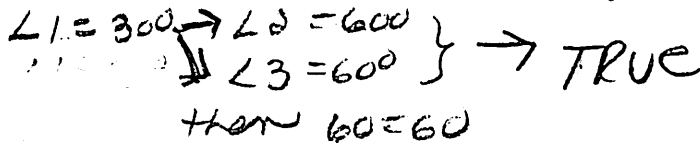
If $\angle ABC$ and $\angle CBD$ form a linear pair then $\angle ABC \cong \angle CBD$

FALSE



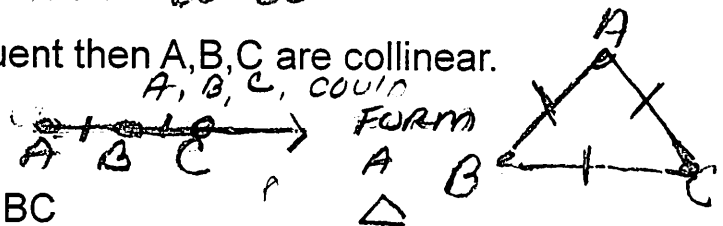
one angle could be acute and other obtuse

If $\angle 1$ is complementary to $\angle 2$ and $\angle 1$ is complementary to $\angle 3$ then $\angle 2 \cong \angle 3$

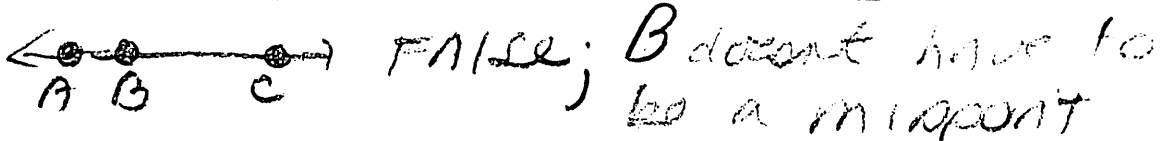


If \overline{AB} , \overline{BC} and \overline{AC} are congruent then A, B, C are collinear.

FALSE

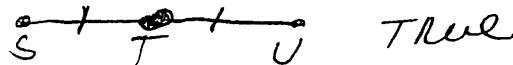


If $AB + BC = AC$, then $AB = BC$



Practice:

1. If S, T, and U are collinear and $ST = TU$, then T is the midpoint of SU .



2. If $\angle 1$ and $\angle 2$ are adjacent angles, then $\angle 1$ and $\angle 2$ form a linear pair.

FALSE
 Both \angle 's could be acute



3. If \overline{GH} and \overline{JK} form a right angle and intersect at P, then \overline{GH} is perpendicular to \overline{JK} .



TRUE, if a right \angle is formed the lines must be perpendicular

4. Each Spring Rachel starts sneezing when the pear trees on her street blossom. She reasons she is allergic to pear trees. Find a counter example to Rachel's conjecture.

FALSE she could be allergic to other blossoming trees or plants that blossom at same time as pear tree