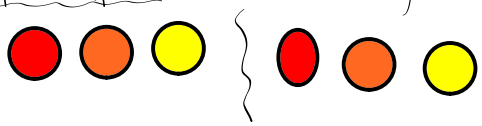
§1-1 Making Conjectures: Inductive Reasoning

Determine the next number in the pattern:

2, 6, 12, 20, 30, 42, ? 56 ?

+4 +6 +8 +10 +12 +14

Explore (p6) ..... What might be the pattern in the rest of the sequence?



OR

OR many other possibilities.

Conjecture - a testable expression that is based on available evidence but is not yet proved.

Inductive Reasoning - drawing a general conclusion by observing patterns & identifying properties in specific examples.

Investigate the Math (p6)

Figure	1	2	3	4	5	...	10
# of △	1	4	9	16	25	...	100
	(1^2)	(2^2)	(3^2)				(10^2)

The number of △'s appears to be the square of the figure #.

Seems to be a reasonable conjecture.

Apply the Math (p7)

Example 1 - precipitation in Vancouver

November has the highest precipitation

August has the lowest precipitation

2005 has the largest precipitation.

Example 2 - Product of two odd integers.

$(3)(5) = 15$

$(-5)(7) = -35$

$(-11)(3) = 33$

} all odd.

The product of two odd integers is odd.

Example 3 - make a conjecture about the difference of two consecutive squares.

$4^2 - 3^2 = 16 - 9 = 7$

$5^2 - 4^2 = 25 - 16 = 9$

$6^2 - 5^2 = 36 - 25 = 11$

Ⓐ ⇒ The difference is the sum of the two numbers that were squared

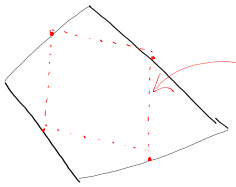
Ⓑ ⇒ The difference is odd

TEST: $11^2 - 10^2 = 121 - 100 = 21$

✓ $10 + 11 = 21$

✓ odd #

Example 4 - joining the midpoints of a quadrilateral.



What can you say about this quadrilateral formed by connecting the midpoints?

MARC: The quadrilateral formed is a parallelogram.

TRACEY: The quadrilateral is a rhombus.

HW: CYU (p12)

p12 | 3, 5-9, 11+12

p17 | 1-3