Bellwork
09/06/2011

x_1, y_1

1. Find the length of a segment with endpoints A(1,-3) and B(-2,-7).

x_2, y_2

$$\sqrt{(x_2-x_1)^2+(y_2-y_1)^2}$$

$$\sqrt{(-2+1)^2+(-7+(+3))^2}$$

$$\sqrt{(-3)^2+(-4)^2}$$

$$\sqrt{9+16}$$

$$\sqrt{25}$$

$$AB=5$$

Geometry
2.1 Use Inductive Reasoning
Standard(s): 2,7

Vocabulary:

1. **Inductive Reasoning:** When one finds a pattern in specific cases and then writes a conjecture for the general case.

2. **Conjecture:** An unproven statement that is based on observations.

3. **Counterexample:** A specific case for which the conjecture is false.

   Ex: "All numbers are positive or negative." Counterexample: "Zero is neither positive nor negative."

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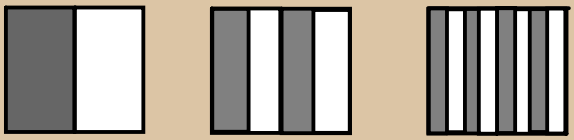
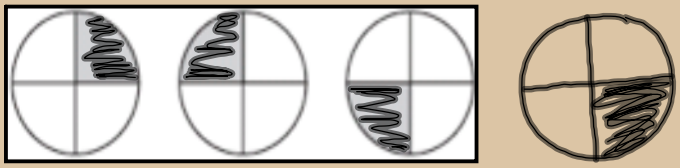
Describe a Visual Pattern

Describe how to sketch the fourth figure in the pattern.



2 4 8 16



5th: place a shaded square inside the inner circle.

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Describe a Number Pattern

Describe the pattern in the numbers 1000, 500, 250, 125,... and write the next three numbers in the pattern.

÷ 2

62.5, 31.25, 15.625

$\frac{1}{3}, \frac{3}{4}, \frac{5}{5}, \frac{7}{6}, \ldots$ +2, +1

$\frac{9}{7}, \frac{11}{8}, \frac{13}{9}$

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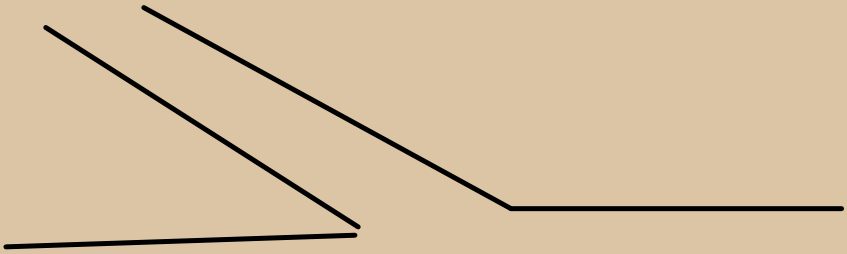
Find a Counterexample

Find a counterexample to disprove the conjecture:
Supplementary angles are always adjacent.



Any four-sided polygon is a square.

The square of any integer is a positive number.

$(0)^2 = 0$, which is neutral

Write a Rule

Use the table to write rule relating x and y.

x	1	2	3	4
y	1	4	9	16

$y = x^2$

$1 = (1)^2$

$4 = (2)^2$

$9 = (3)^2$

$16 = (4)^2$

Pull

x	1	2	3	4
y	9	8	7	6

$y = -x + 10$ or $y = 10 - x$

$1 - 10 = -9$ X $10 - 2 = 8$ ✓ $10 - 4 = 6$ ✓

$10 - 1 = 9$ ✓ $10 - 3 = 7$ ✓

Homework Assignment

Worksheet 2.1B

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