

Exploring the World of Math

Name: _____ Date: _____

Test 1 – Fibonacci Sequences and the Golden Ratio

1. Write a Fibonacci sequence from 1 to 610

F_1	F_2	F_3	F_4	F_5	F_6	F_7	F_8	F_9	F_{10}	F_{11}	F_{12}	F_{13}	F_{14}	F_{15}

2. Compute the following using data provided:

F_{31}	F_{32}	F_{33}	F_{34}
	2178309	3524578	

a. Calculate the value of F_{34}

b. Calculate the value of F_{31}

3. Compute the following:

- $F_{12} + 10$
- F_{7+6}
- $F_{64/8}$
- $F_3 + F_6$
- $F_{16} \div F_4$

4. Compute the following:

- phi
- $1 \div \text{phi}$
- Phi^3
- $\text{Phi}^7 / \sqrt{5}$
- $\text{Phi}^8 / \sqrt{5}$

5. What is the Fibonacci number F_{610} ?

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6. Roger is working on a cage design and decides to use the golden ratio as a guide. If the width (long side) is 250 decimeters, what should the height be?

7. Miranda measures the distance of the cat's face as 150 cm. She measures the height of the cat's face as 90 cm. Is the cat's face proportioned similar to the golden ratio? Show the math.

8. Draw a rectangle that has the proportion of the Golden Ratio with the long side of eight.

9. Draw a Fibonacci spiral 1, 1, 2, 3, 5

10. Name five natural objects that display the Fibonacci sequence or the Golden Ratio.

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