

## Exploring the World of Math

Name: \_\_\_\_\_ Date: \_\_\_\_\_

### Phi

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:

- a.  $F_5 \div F_4$
- b.  $F_8 \div F_7$
- c.  $F_{10} \div F_9$
- d.  $F_{12} \div F_{11}$
- e.  $F_{15} \div F_{14}$

3. Compute the following:

- a.  $\sqrt{4}$
- b.  $\sqrt{5}$
- c.  $9^2$
- d.  $(5 + 2)^2$
- e.  $(1 + \sqrt{5})^2$
- f.  $1.618^6$
- g.  $1.618^8 / \sqrt{5}$

Do the following problems in your textbook

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19. A.  B.  C.

20. A.  B.  C.

21. A.  B.  C.

22. A.  B.  C.

Given that  $\Phi^2 = \Phi + 1$  compute

- 4.  $\Phi^3$
- 5.  $\Phi^5$
- 6.  $\Phi^6$
- 7.  $\Phi^7$
- 8.  $\Phi^8$

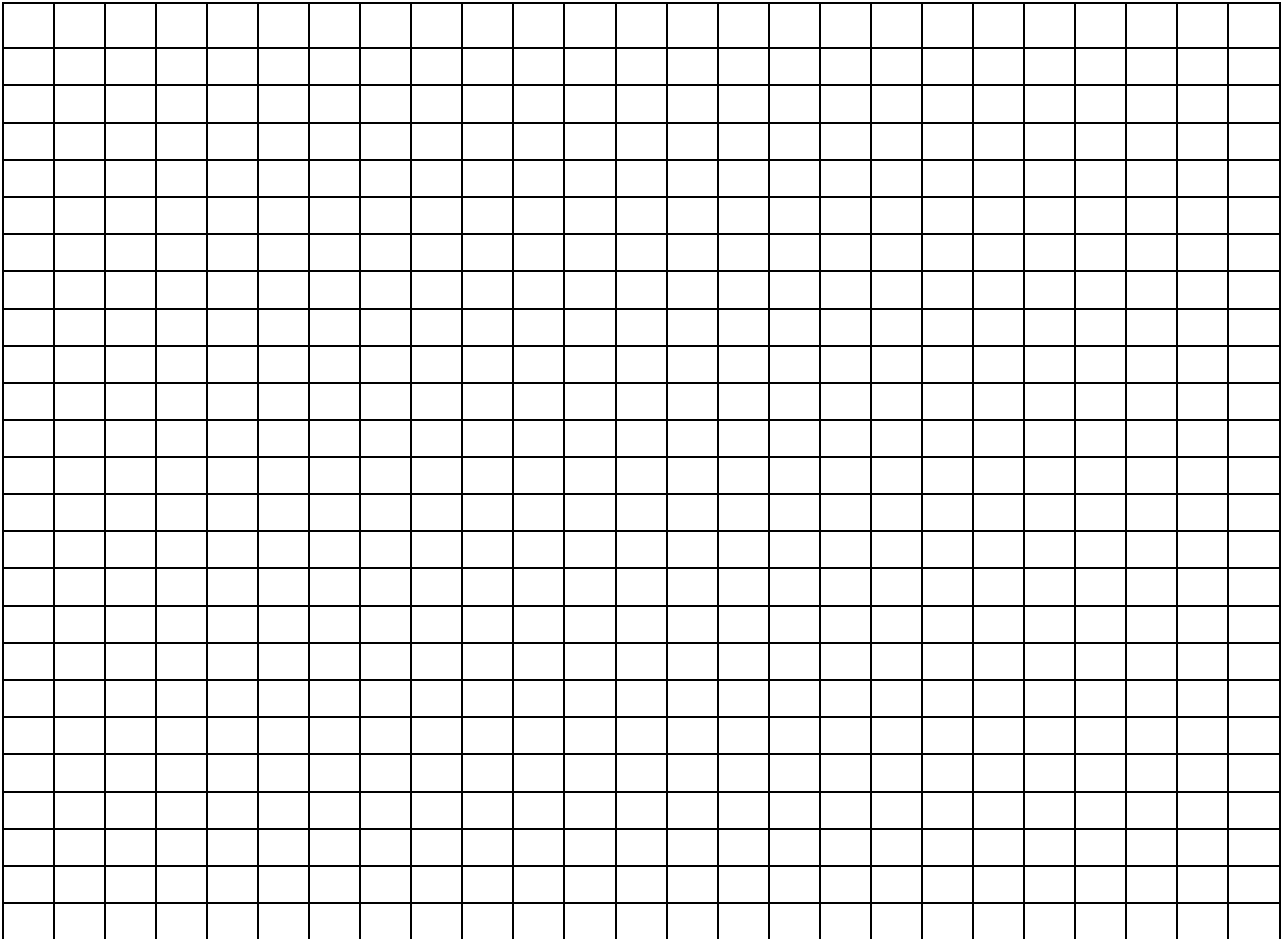
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Fibonacci Spiral

9. Write a Fibonacci sequence from 1 to 610

|                |                |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |
|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| F <sub>1</sub> | F <sub>2</sub> | F <sub>3</sub> | F <sub>4</sub> | F <sub>5</sub> | F <sub>6</sub> | F <sub>7</sub> | F <sub>8</sub> | F <sub>9</sub> | F <sub>10</sub> | F <sub>11</sub> | F <sub>12</sub> | F <sub>13</sub> | F <sub>14</sub> | F <sub>15</sub> |
|                |                |                |                |                |                |                |                |                |                 |                 |                 |                 |                 |                 |

10. Draw four Fibonacci Spirals



11. Draw a rectangle that has the proportion of the Golden Ratio with one side of 4 and another rectangle with a side of 7

