Week 3

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12/12 points earned (100%)

Quiz passed!

1 / 1 points

1.
A golden spiral is a logarithmic spiral whose radius increases or decreases by a factor of Φ with each _____ turn.

1 / 1 points

2.
The accumulation point of all the spiraling squares in a golden rectangle is

1 / 1 points

3.

If clockwise spiraling squares are drawn with the first square on the right side of the largest golden rectangle, then the origin of the golden spiral occurs in the _____ of the largest golden rectangle.

1 / 1 points

4.

The golden spiral and the Fibonacci spiral

1 / 1 points

5.

The golden rectangle with vertices at the four possible accumulation points of the spiraling squares has side length reduced from that of the original golden rectangle by a factor of

1 / 1 points

6.

A 21×34 rectangle can be divided into squares with side lengths given by the first ____ Fibonacci numbers.

1 / 1 points

7.

The first two rational approximations to π from its continued fraction are 3 and $22/7$. What is the next rational approximation?

1 / 1 points

8.

The first three rational approximations to $\sqrt{2}$ from its continued fraction are 1, $3/2$, and $7/5$. What is the next rational approximation?

1 / 1 points

9.

To develop the continued fraction for $\sqrt{5}$, one should start with the expression

1 / 1 points

10.

Which of the following statements are true?

A. $\Phi = 1 + \frac{1}{\Phi}$

B. $\Phi = 1 + \cfrac{1}{1 + \frac{1}{\Phi}}$

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1 / 1 points

11.

The golden angle is given by $g = 2\pi(1 - \phi)$. The nth rational approximation to $g/2\pi$ from its continued fraction is given by

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1 / 1 points

12.

In our model of the sunflower head, $2\pi\alpha$ is chosen to be the golden angle because

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