Fractals and Scaling (2020)

4.9 Test » Test for Unit 4

Instructions 1

You may use any course materials, websites, calculators, etc. for this test. Just don't ask another person for the answers or share your with other people. If you have questions about the test, please send them to us via email.

Question 2

Suppose a certain quantity is distributed according to $p(x) = 0.38x^{-1.5}$. What is the value of p(2)/p(4)?

- A. 1.5
- B. 2
- C. 2.5
- D. 2.83

Question 3

Suppose a certain quantity is distributed according to . What is the value of p(3)/p(6)?

- A. 1.41
- B. 2.09
- C. 2.83
- D. 3

Question 4

Suppose a certain quantity is distributed according to $p(x) = (1/4)(3/4)^{x-1}$. What is the value of p(4)/p(8)?

- A. 3.16
- B. 4.0
- C. 6.23
- D. 7.49

Question 5

Suppose you play the St. Petersburg game and obtain the following results, in order: H, TTH, TH, TH. What are the average winnings af fourth game?

- A. 3.5
- B. 4.0
- C. 4.5
- D. 5.0

Question 6

What are some distinguishing features of power laws?

- A. They are scale free.
- B. They have long tails.
- C. They sometimes do not posses average properties.
- D. All of the above.

Question 7

Consider a quanitity x distributed according to $p(x) = Ax^{-\alpha}$. Which of the following statements is true?

- A. The average of x does not exist for all α.
- B. The average of x does not exist if α is less than or equal to 2.
- C. The average of x does not exist if α is less than or equal to 4.
- D. The average of x exists for all α.