UNIT 7 • SEQUENCES & SERIES

Activity 7.2: Series, Binomials & Applications

A

Name: _____ Partner's name: _____ Date: _____

Directions: Answer each question. Show your work.

Work alone, then compare after each problem. If answers differ, find the mistake together.

1

Evaluate: $\sum_{k=1}^{5}(2k+1)$

Answer: _____ Match? ☐ Yes ☐ No

2

How many terms are in the sequence $3, 7, 11, \ldots, 83$?

Answer: _____ Match? ☐ Yes ☐ No

3

Find the sum of the first 8 terms of the geometric sequence with $a_1 = 3$ and $r = 2$.

Answer: _____ Match? ☐ Yes ☐ No

4

Find the sum of the infinite geometric series with $a_1 = 6$ and $r = -\frac{1}{2}$.

Answer: _____ Match? ☐ Yes ☐ No

5

Find the coefficient of x^2 in $(x+1)^5$.

Answer: _____ Match? ☐ Yes ☐ No

6

Expand $(x+2)^3$.

Answer: _____ Match? ☐ Yes ☐ No

7

A ball dropped from 100 ft rebounds to 80% of its previous height each time. How high is the third rebound?

Answer: _____ Match? ☐ Yes ☐ No

8

Find the positive geometric mean of 2 and 18.

Answer: _____ Match? ☐ Yes ☐ No

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B

Name: _____ Partner's name: _____ Date: _____

Directions: Answer each question. Show your work.

Work alone, then compare after each problem. If answers differ, find the mistake together.

1

Evaluate: $\sum_{k=0}^{4}(2k+3)$

Answer: _____ Match? ☐ Yes ☐ No

2

How many terms are in the sequence $5, 9, 13, \ldots, 85$?

Answer: _____ Match? ☐ Yes ☐ No

3

Find the sum of the first 4 terms of the geometric sequence with $a_1 = 9$ and $r = 4$.

Answer: _____ Match? ☐ Yes ☐ No

4

Find the sum: $\sum_{n=0}^{\infty} 2\left(\frac{1}{2}\right)^n$

Answer: _____ Match? ☐ Yes ☐ No

5

Find the coefficient of x^3 in $(x+1)^5$.

Answer: _____ Match? ☐ Yes ☐ No

6

Expand $(x+2)(x^2+4x+4)$.

Answer: _____ Match? ☐ Yes ☐ No

7

A ball dropped from 800 ft rebounds to 40% of its previous height each time. How high is the third rebound?

Answer: _____ Match? ☐ Yes ☐ No

8

Find the positive geometric mean of 3 and 12.

Answer: _____ Match? ☐ Yes ☐ No