Sequences, Mathematical Induction, and Recursion · Partner Check 2

A

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

Directions: Work alone on your own problems. Partner B has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

Arithmetic sequence: $a_1 = -1$, $d = 4$. Find a_7.

Answer: _____ Match? ☐ Yes ☐ No

2

Evaluate C(4, 2).

Answer: _____ Match? ☐ Yes ☐ No

3

Evaluate 7!/4!.

Answer: _____ Match? ☐ Yes ☐ No

4

Evaluate C(5, 2).

Answer: _____ Match? ☐ Yes ☐ No

5

Evaluate 1 + 2 + ... + 11.

Answer: _____ Match? ☐ Yes ☐ No

6

$a_0 = 3$, a_n = 2a_(n−1) + 1. Find a_5.

Answer: _____ Match? ☐ Yes ☐ No

Sequences, Mathematical Induction, and Recursion · Partner Check 2

B

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

Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

$a_1 = -1$ and $a_n = a_{n-1} + 3$. Find a_9.

Answer: _____ Match? ☐ Yes ☐ No

2

How many 2-element subsets does a 4-element set have?

Answer: _____ Match? ☐ Yes ☐ No

3

How many ways can 3 different medals be given to 3 of 7 runners?

Answer: _____ Match? ☐ Yes ☐ No

4

How many 2-element subsets does a 5-element set have?

Answer: _____ Match? ☐ Yes ☐ No

5

Evaluate $\sum_{k=1}^{11} k$.

Answer: _____ Match? ☐ Yes ☐ No

6

How many moves does the Tower of Hanoi need for 7 disks ($m_k = 2m_{k-1} + 1$, $m_1 = 1$)?

Answer: _____ Match? ☐ Yes ☐ No

Sequences, Mathematical Induction, and Recursion · Partner Check 2

A

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

Directions: Work alone on your own problems. Partner B has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

$a_0 = 3$, $a_n = 2a_{(n-1)} + 1$. Find a_3.

Answer: _____ Match? ☐ Yes ☐ No

2

Evaluate $9!/7!$.

Answer: _____ Match? ☐ Yes ☐ No

3

Evaluate $C(6, 2)$.

Answer: _____ Match? ☐ Yes ☐ No

4

Evaluate $C(7, 5)$.

Answer: _____ Match? ☐ Yes ☐ No

5

Evaluate $1 + 2 + \ldots + 14$.

Answer: _____ Match? ☐ Yes ☐ No

6

Arithmetic sequence: $a_1 = 4$, $d = 2$. Find a_{13}.

Answer: _____ Match? ☐ Yes ☐ No

Sequences, Mathematical Induction, and Recursion · Partner Check 2

B

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

Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

How many moves does the Tower of Hanoi need for 5 disks ($m_k = 2m_{(k-1)} + 1$, $m_1 = 1$)?

Answer: _____ Match? ☐ Yes ☐ No

2

How many ways can 2 different medals be given to 2 of 9 runners?

Answer: _____ Match? ☐ Yes ☐ No

3

How many 2-element subsets does a 6-element set have?

Answer: _____ Match? ☐ Yes ☐ No

4

How many 2-element subsets does a 7-element set have?

Answer: _____ Match? ☐ Yes ☐ No

5

Evaluate $\Sigma_{k=1}^{14} k$.

Answer: _____ Match? ☐ Yes ☐ No

6

$a_1 = 10$ and $a_n = a_{(n-1)} + 3$. Find a_7.

Answer: _____ Match? ☐ Yes ☐ No

A

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Directions: Work alone on your own problems. Partner B has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

Evaluate C(7, 5).

Answer: _____ Match? ☐ Yes ☐ No

2

Evaluate 1 + 2 + ... + 20.

Answer: _____ Match? ☐ Yes ☐ No

3

Evaluate 6!/5!.

Answer: _____ Match? ☐ Yes ☐ No

4

$a_0 = 1$, a_n = 2a_(n−1) + 1. Find a_5.

Answer: _____ Match? ☐ Yes ☐ No

5

Arithmetic sequence: $a_1 = 1$, d = 5. Find a_13.

Answer: _____ Match? ☐ Yes ☐ No

6

Evaluate C(5, 2).

Answer: _____ Match? ☐ Yes ☐ No

B

Sequences, Mathematical Induction, and Recursion · Partner Check 2

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

Directions: Work alone on your own problems. Partner A has different problems with the same answers. After each problem, compare answers; if they differ, find the mistake together.
Answer conventions: sets in roster form with elements in increasing order, ∅ for the empty set; truth columns as T/F strings in standard row order (TT, TF, FT, FF; with r: TTT, TTF, …, FFF); fractions in lowest terms; ordered pairs as (x, y).

1

How many 2-element subsets does a 7-element set have?

Answer: _____ Match? ☐ Yes ☐ No

2

Evaluate Σ_{k=1}^{20} k.

Answer: _____ Match? ☐ Yes ☐ No

3

How many ways can 1 different medals be given to 1 of 6 runners?

Answer: _____ Match? ☐ Yes ☐ No

4

How many moves does the Tower of Hanoi need for 6 disks ($m_k = 2m_{(k-1)} + 1$, $m_1 = 1$)?

Answer: _____ Match? ☐ Yes ☐ No

5

$a_1 = 1$ and $a_n = a_{(n-1)} + 4$. Find a_{16}.

Answer: _____ Match? ☐ Yes ☐ No

6

How many 2-element subsets does a 5-element set have?

Answer: _____ Match? ☐ Yes ☐ No