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Math_Questions_0045

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1 of 25

If the limit of $f(x)$ as x approaches 2 from the negative side is 14 while the limit of $f(x)$ as x approaches 2 from the positive side is 13, what can we conclude?

$f(x)$ is discontinuous at $x = 2$.

$f(x)$ is a discontinuous function.

The limits are not equal.

All of the above.

2 of 25

What is the value of the infinite series governed by $a_1 = 1/3$ and $r = 5/6$?

1/18

0

2/5

2

3 of 25

$$\lim_{x \rightarrow 4} \frac{x^2 - 6x + 8}{x - 4} ?$$

What is the value of

1, because any value divided by itself is always 1.

0.

Undefined, you cannot divide by 0.

2.

4 of 25

What is the value of the infinite series governed by $a_1 = 1$ and $r = 2$?

-1/2

0

1

None of the above

5 of 25

A recent poll of young executives revealed that 60% of them go to the gym to stay fit and healthy, while 50% say they walk during lunch to stay fit and healthy. What is the probability that a randomly selected young executive likes to neither go to the gym nor take lunchtime walks to stay fit and healthy?

10%

20%

30%

There is insufficient information to solve this problem.

6 of 25

What can we say about event E is $P(E) = 0$?

It is impossible.

It is improbable.

It may be either impossible or improbable.

None of the above.

7 of 25

What is the approximate value of the 9th term of a series with $r = 0.9$ with $a_1 = 9$?

100

39

4

1

$$a_9 = 9(0.9)^8 = 3.874204889$$

If a decimal is missing in the 2nd answer, then choose that one, otherwise whoever made this problem is really stupid.

8 of 25

What is the first term of a series whose ratio is 2 and $a_7 = 64$?

1

0

2

This problem cannot be solved; you have to know a_1 first.

9 of 25

Converting repeating decimals to fractions is a type of ____ process.

infinite arithmetic series

finite arithmetic series

infinite geometric series

finite geometric series

10 of 25

Adding together the first ten natural numbers squared is an example of a(n):
series.

arithmetic series.

geometric series.
sequence.

11 of 25

A mathematical limit is:
a value you can reach.

something that can be approached but never reached.

something that can be exceeded so long as the math police don't catch you.

always a value.

12 of 25

What is infinity?

A limit

A number

Either of the above

None of the above

13 of 25

Consider two events, A and B; if the presence of A excludes the possibility of B, then we can say:

events A and B are mutually exclusive.

events A and B are independent.

event B is mutually exclusive of event A, but event A may or may not be mutually exclusive of event B.

you cannot say anything about these two events.

14 of 25

Is $h(x) = -x^{-4}$ a continuous function?

Yes.

No.

There is no way to know.

No, you cannot divide by zero.

15 of 25

Mathematical induction is a two-step process that tests the truthfulness of mathematical formulas. If both steps are found to hold (be true), then does this mean that the formula is always true?

Yes, definitely.

Maybe.

No, mathematical induction proves formulas to be false.

No, mathematical deduction is what you should be using.

16 of 25

What is the value of the $\lim_{x \rightarrow 4} x^2 - 4x$?

0

32

$16 - 4x$

$x^2 - 16$

17 of 25

Your friend claims that you can use $n/2(2a_1 + d(n - 1))$ to solve for any arithmetic series; is your friend correct?

No, you have to first determine the value of the n th term.

No, there is no S_n term.

Yes, my friend has eliminated the need to know S_n .

Yes, my friend has just combined the two standard formulas.

18 of 25

If $P(A)$, $P(B) \neq 0$ and $P(A \text{ or } B) = P(A) + P(B)$, then what can we say about events A and B?

They are independent.

They are mutually exclusive.

They are mutually dependent.

You cannot say anything about these two events.

19 of 25

Is there anything wrong with saying that the sum of all the whole numbers is infinity?

Yes, you cannot add whole numbers together.

Yes, infinity is a limit, not a numerical value.

No, infinity is a number.

No, the sum converges.

20 of 25

The lesson used a subway train in New York City traveling between Liberty Avenue and Rockaway Boulevard as an example of a(n):
series.

sequence.

routing.
arithmetic induction problem.

I have no way to know b/c I didn't see the lesson.

21 of 25

What is the sum of 5 sequential values of difference -4 that begins at 12?

20

4

-8

You cannot use a negative value for d

22 of 25

What is the 10th value of an arithmetic sequence of difference 4 that begins at 14?

54

50

24

There is no method to determine this.

23 of 25

If event A is required for event B to exist, then we can say:

the events are mutually dependent.

the events are mutually inclusive.

event B is dependent on event A, but event A may or may not be dependent on event B.

event B is dependent on event A, and event A is dependent on event B.

24 of 25

Calculating how much money you have in a financial savings instrument involves:
a finite sequence.

an arithmetic series.

a geometric series.

an infinite sequence.

Usually these are geometric, but they don't have to be. They are definitely finite, unless you are immortal and plan to live forever.

25 of 25

A recent poll of young executives revealed that 60% of them go to the gym to stay fit and healthy, while 50% say they walk during lunch to stay fit and healthy. What is the

probability that a randomly selected young executive likes to either go to the gym or take lunchtime walks to stay fit and healthy?

30%

80

110%

There is insufficient information to solve this problem.