Question of the Day

What <u>is</u> a number?

On the Docket

Math vocabulary.
Concept review.
Continuity.

$$B_{t+1} = \gamma \cdot B_t$$

- What is this expression?
- What is B_t?
- What is B_{t+1}?

- What is γ?
- What is t?

Mathematical Vocabulary

$$B_{t+1} = \gamma \cdot B_t$$

- What is this expression?
- What is B_t?
- What is B_{t+1}?

- What is γ?
- What is t?

$$B(t) = B_0(\gamma)^t$$

- What is this expression?
- What is B_0?
- What is $B(t)$?

- What is γ?
- What is t?

$$1, 3, 6, 10, 15, 21, \ldots$$

- What is this expression?
- What does ... mean?

Mathematical Vocabulary

$$1, 3, 6, 10, 15, 21, \ldots$$

- What is this expression?
- What does ... mean?

$$1 + 2 + 3 + 4 + 5 + 6 + \cdots + n$$

- What is this expression?
- What does $\cdots$ mean?
- What are the partial sums?
- What does n mean?

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- What is this expression?
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- What is this expression?
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These are the "triangle numbers." Why?

Concept Review

Activity 1

Write a recurrence relation. Your relation should

1. Model some real world behavior.
2. Have initial value(s) and a formula for the next value.

Once it is written, calculate the next value for at least two steps.

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Activity 2

Find a closed form for your relation from Activity 1.
Check to see that it fits your previous calculations.

Concept Review

Three Possibilities for Limits

A limit may get "arbitrarily close" to some real number c.

$$\lim_{t \to \infty} = c$$

A limit may become "arbitrarily large" (or small).

$$\lim_{t \to \infty} = \pm\infty$$
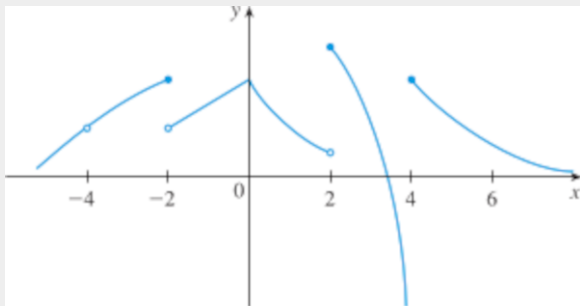
A limit may simply not exist.

Activity 3

Give an example (by description, graph or formula) of

1. A limit which approaches some number c.
2. A limit which tends to positive or negative infinity.
3. A limit which does not exist.

Continuity

Consider the following graph.

What is the graph doing

- At -4?
- At -2?
- At 0?

- At 2?
- At 4?