Topic: Repeating decimals

Question: What's the next digit in 5.6321563215 if this decimal number can be rewritten as $5.\overline{63215}$?

Answer choices:

A 3

B 6

C 5

D 1

Solution: B

The bar over the 63215 indicates that this part of the number is repeating, which means the number could be written as

$$5.6321563215632156321563215...$$

Therefore, the next digit (the digit that comes immediately after 5.6321563215) is a 6.

Topic: Repeating decimals

Question: Rewrite the repeating decimal.

$0.083333...$

Answer choices:

A $0.08\overline{3}$

B $0.0\overline{83}$

C $0.083\overline{3}$

D 0.08

Solution: A

Once we get to the 3 immediately following the 8 in

$$0.083333...$$

the number 3 repeats forever, which means we can collapse all the 3's into a single 3 with a bar over it.

$$0.08\overline{3}$$

Topic: Repeating decimals

Question: Rewrite the repeating decimal.

$232.3232323\ldots$

Answer choices:

A 232.33

B $232.\overline{32}$

C $232.3\overline{23}$

D $232.\overline{3}$

Solution: B

Considering all the numbers after the decimal point of

$$232.3232323...$$

we have an indefinitely repeating 32. Which means we need to collapse all the repeating 32s and put a line over the first 32.

$$232.\overline{32}$$