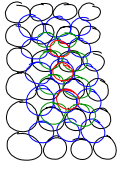


June 11, 2015

Quiz # 3

#3)



① $6 \times 4 = 24$
 ② $5 \times 3 = 15$
 ③ $4 \times 2 = 8$
 ④ $3 \times 1 = 3$

50 balls

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#2)

$-\frac{1}{3}, \frac{1}{9}, -\frac{1}{27}, \frac{1}{81}, -\frac{1}{243}$

$3^2 \quad 3^3 \quad 3^4 \quad 3^5$

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Chapter 2 - Set Theory

Def.: A set is a collection of things where the things have something in common.

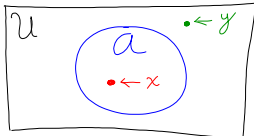
* We say the things are members of the set.

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Venn Diagrams

Universal Set
 "U" Contains Everything


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① x is a member of Set A
 ② Set A is a member of Set U.
 ③ Then, x is a member of U.

④ y is not a member of A, but only of U.

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* Key Idea: all sets contain the "Null" set.

Def.: The Null set is a set that has no members.
 i.e. the empty set \emptyset

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Set Notation

$$A = \{x, y\}$$

↑ name of the set ↑ things inside are members of A.

$$B = \{ \text{all carnivorous animals} \}$$

List the members.

$$B = \{ \underset{\substack{\uparrow \\ \text{Place holder}}}{x} \mid \text{such that what?} \}$$

↑ such that *

* Note: | or : means "such that"

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$$B = \{ x \mid x \text{ is a carnivorous animal} \}$$

↑ name

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Null set notation

$$A = \{ \}$$

* Not a good way to state the null set.

* A is the set that contains nothing

$$A = \emptyset$$

* Much better!

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$$B = \{ \emptyset \}$$

* Is "B" the null set?

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$$S = \{ 1, 2, c, \emptyset \}$$

listed the members

$$U = \{ \emptyset \}$$

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$$S = \{ x \mid x \text{ is } 1, 2, c, \emptyset \}$$

Read 2.1 Sets

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