

June 16, 2015

$A = \emptyset$

Cardinal Number

$n(A) = 0$

↑
set name

Jun 16-11:03 AM

June #4

#1) $A = \{c, d, e, f, g, h, i, j, k, l\}$
 $n(A) = 10$

$B = \{c, d, e, g, h, i, j, k, l\}$
 $n(B) = 9$

#2) $\emptyset = \{\emptyset\}$ T or F

$\emptyset = \{\}$ T

$\{\{\{\{\emptyset\}\}\}\}$

#3) $B = \{x \mid x \text{ is a student at UTM}\}$

x such that x is a student at UTM.

Jun 16-11:20 AM

Subset of a Set

$D \subseteq C$ subset

B is a subset of A
 * Reading left to right

Proper Subset of a Set

① $D \subseteq C$ ✓ } so $D \subset C$

② $D \neq C$ } ↑
 proper subset

Jun 16-11:29 AM

$D \subseteq C$ true

$D = C$ true } so, $D \not\subset C$

Jun 16-11:38 AM

T or F

$\{x \mid x \text{ is a letter in the word happy}\} \subseteq \{y \mid y \text{ is a letter in the word happiness}\}$

$\{h, a, p, y\} \subseteq \{h, a, p, i, n, e, s\}$

Jun 16-11:42 AM

① $E \subseteq I$

② $I \subseteq E$

So, the conclusion is

$E = I$

or $E \neq I$ not proper

$I \neq E$

Jun 16-11:48 AM

Counting Subsets

$A = \{a, b, c\}$

* $n(A) = 3$

Size of Subset	Subsets of this size	Number of Subsets
0	\emptyset	1
1	$\{a\}, \{b\}, \{c\}$	3
2	$\{a, b\}, \{a, c\}, \{b, c\}$	3
3	$\{a, b, c\}$	1

$8 = 2 \cdot 2 \cdot 2$
 $= 2^3$

8 subsets in A

Jun 16-11:51 AM

How many subsets are in $B = \{1, 2, 3, 4, 5\}$?

$n(B) = 5$

0 \emptyset (1)

1 $\{1, 2\}, \{1, 3\}, \{1, 4\}, \{1, 5\}, \{2, 3\}, \{2, 4\}, \{2, 5\}, \{3, 4\}, \{3, 5\}, \{4, 5\}$ (10)

2 $\{1, 2, 3\}, \{1, 2, 4\}, \{1, 2, 5\}, \{1, 3, 4\}, \{1, 3, 5\}, \{1, 4, 5\}, \{2, 3, 4\}, \{2, 3, 5\}, \{2, 4, 5\}, \{3, 4, 5\}$ (10)

3 $\{1, 2, 3, 4\}, \{1, 2, 3, 5\}, \{1, 2, 4, 5\}, \{1, 3, 4, 5\}, \{2, 3, 4, 5\}$ (5)

4 $\{1, 2, 3, 4, 5\}$ (1)

$32 = 2 \cdot 2 \cdot 2 \cdot 2 \cdot 2$
 $= 2^5$

32

Jun 16-12:03 PM