

## The number of functions

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1)  $A = \{a, b, c, d, e\}$  and  $B = \{x, y, z\}$ . Then the number of surjections that can be defined from the set A to the set B is

(?????  $A = \{a, b, c, d, e\}$  ? ??? ??????  $B = \{x, y, z\}$  ?? ??? ??? ???????? ????? ?????? ??????)

A) 0

B) 15

C) 150

D) 200

2)  $A = \{1, 2, 3, 4\}$  and  $B = \{1, 2, 3, 4\}$ . Then the number of bijective functions from A to B is

( $A = \{?, ?, ?, ?\}$  ? ???  $B = \{?, ?, ?, ?\}$  ?? ??? ??? ?????-????????? ????? ?????? ??????)

A) 4

B) 16

C) 20

D) 24

3)  $A = \{1, 2, 3, 4\}$  and  $B = \{a, b, c\}$ . Then the number of functions that can be defined from A to B is

(?????  $A = \{?, ?, ?, ?\}$  ? ??? ??????  $B = \{?, ?, ?\}$  ?? ??? ??? ????? ?????? ??????)

A) 21

B) 81

C) 54

D) 99

4)  $A = \{1, 2, 3, 4\}$  and  $B = \{1, 2, 3, 4\}$ . Then the number of functions that can be defined from A to B is

(?????  $A = \{?, ?, ?, ?\}$  ? ??? ??????  $B = \{?, ?, ?, ?\}$  ?? ??? ??? ????? ??????)

- A) 220
- B) 160
- C) 292
- D) 256

5)  $A = \{1, 2, 3, 4\}$  and  $B = \{1, 2, 3, 4\}$ . Then the number of surjections that can be defined from the set A to the set B is

(?????  $A = \{?, ?, ?, ?\}$  ? ??? ??????  $B = \{?, ?, ?, ?\}$  ?? ??? ??? ????????? ????? ??????)

- A) 16
- B) 9
- C) 12
- D) 24

6)  $A = \{1, 2, 3, 4\}$  and  $B = \{1, 2, 3, 4, 5\}$ . Then the number of surjections that can be defined from the set A to the set B is

(?????  $A = \{?, ?, ?, ?\}$  ? ??? ??????  $B = \{?, ?, ?, ?, ?\}$  ?? ??? ??? ????????? ????? ??????)

- A) 20
- B) 15
- C) 0
- D) 41

7)  $A = \{1, 2, 3, 4, 5\}$  and  $B = \{1, 2, 3, 4, 5\}$ . Then the number of functions that can be defined from A to B is

(?????  $A = \{?, ?, ?, ?, ?\}$  ? ??? ??????  $B = \{?, ?, ?, ?, ?\}$  ?? ??? ??? ????? ??????)

- A) 4120
- B) 4025
- C) 3125
- D) 625

8)  $A = \{1, 2, 3, 4, 5\}$  and  $B = \{1, 2, 3, 4, 6\}$ . Then the number of surjections that can be defined from the set A to the set B is

(?????  $A = \{?, ?, ?, ?, ?\}$  ? ??? ??????  $B = \{?, ?, ?, ?, 6\}$  ?? ??? ??? ???????? ????? ??????? ???????)

- A) 1
- B) 5
- C) 120
- D) 25

9)  $A = \{1, 2, 3, 4\}$  and  $B = \{1, 2, 3, 4, 5, 6\}$ . Then the number of injective functions that can be defined from A to B is

(?????  $A = \{?, ?, ?, ?\}$  ? ??? ??????  $B = \{?, ?, ?, ?, 5, ?\}$  ?? ??? ??? ?????? ????? ??????? ???????)

- A) 24
- B) 256
- C) 720
- D) 360

10)  $A = \{1, 2, 3, 4, 5\}$  and  $B = \{1, 2\}$ . Then the number of surjections that can be defined from the set A to the set B is

(?????  $A = \{?, ?, ?, ?, ?\}$  ? ??? ??????  $B = \{?, ?\}$  ?? ??? ??? ???????? ????? ??????? ???????)

- A) 25
- B) 30

C) 10

D) 20

**Answers:**

?) C ?) D ?) B ?) D ?) D ?) C ?) C ?) C ?) D ??) B

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