

EduSahara™ Learning Center Assignment

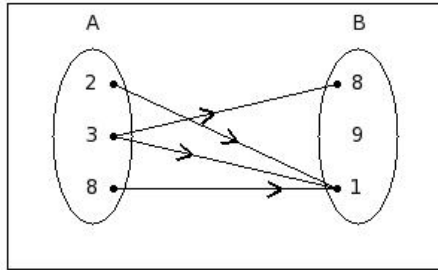
Grade : Class VII, ICSE

Chapter : Relations and Mapping

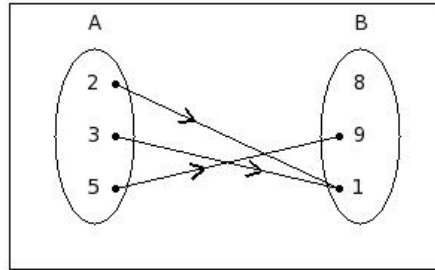
Name : Functions

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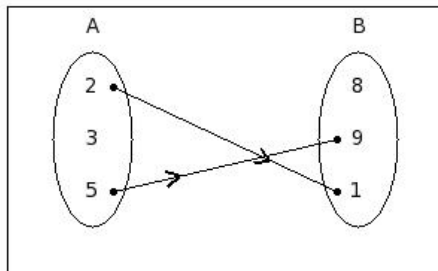
1. Which of the following relations $R : A \rightarrow B$ represent a function, given $A = \{2, 3, 5\}$ and $B = \{8, 9, 1\}$?



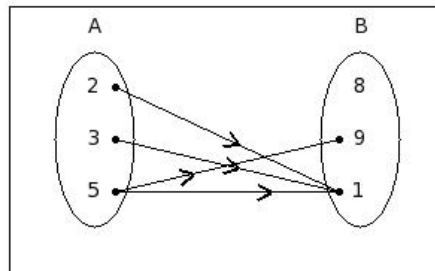
I



II



III



IV

(i) III (ii) I (iii) IV (iv) II

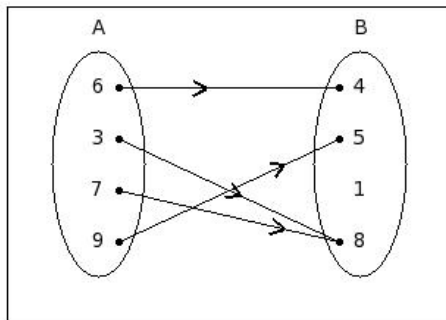
2. Which of the following does not represent a function $f : A \rightarrow B$, where $A = \{4, 10, 5, 1, 8\}$ and $B = \{3, 7, 6, 2, 9\}$?

- (i) $\{(10, 6), (5, 6), (4, 7), (10, 9), (5, 2)\}$
- (ii) $\{(10, 6), (8, 7), (5, 6), (4, 6), (1, 7)\}$
- (iii) $\{(1, 2), (5, 7), (10, 6), (4, 3), (8, 2)\}$
- (iv) $\{(4, 2), (8, 9), (10, 7), (5, 6), (1, 2)\}$
- (v) $\{(4, 7), (10, 9), (8, 7), (5, 7), (1, 6)\}$

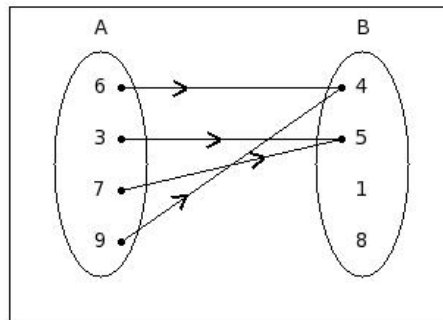
3. Which of the following does not represent a function $f : A \rightarrow B$, where $A = \{8, 1, 6, 9, 3, 10\}$ and $B = \{7, 5, 4, 2\}$?

- (i) $\{(9,2),(8,7),(10,5),(1,5),(3,7),(6,5)\}$
 (ii) $\{(8,4),(3,4),(10,7),(1,5),(6,5)\}$
 (iii) $\{(8,5),(6,7),(10,2),(9,7),(3,7),(1,5)\}$
 (iv) $\{(3,4),(1,5),(6,5),(9,7),(10,5),(8,2)\}$
 (v) $\{(8,7),(3,5),(6,5),(9,4),(10,2),(1,7)\}$

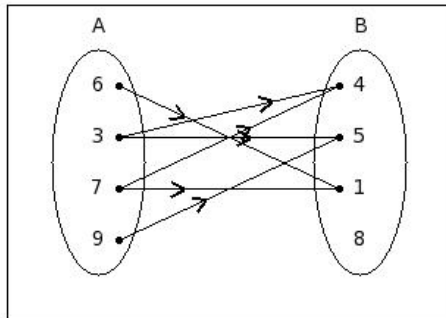
4. Which of the following does not represent a function $f: A \rightarrow B$,
 where $A = \{6,3,7,9\}$ and $B = \{4,5,1,8\}$?



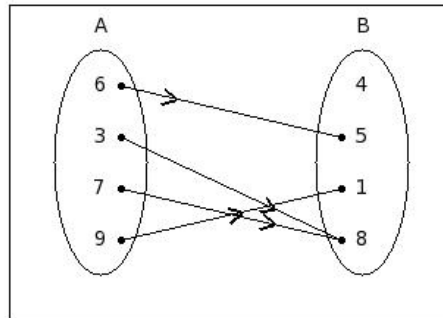
I



II



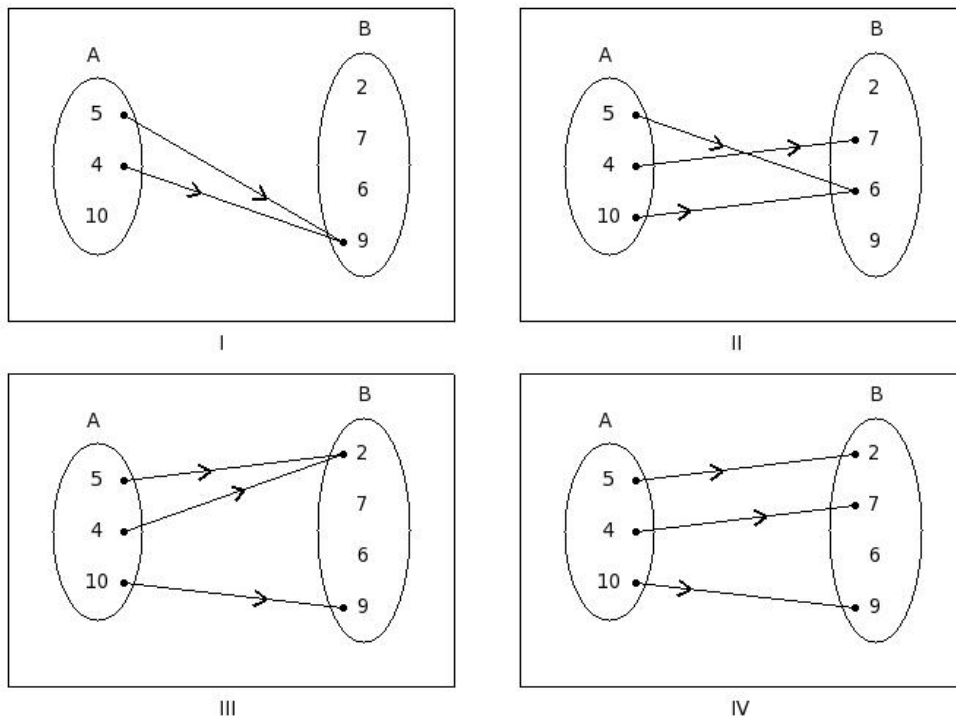
III



IV

- (i) III (ii) IV (iii) I (iv) II

5. Which of the following does not represent a function $f: A \rightarrow B$,
 where $A = \{5,4,10\}$ and $B = \{2,7,6,9\}$?



(i) II (ii) I (iii) IV (iv) III

6. Which of the following relations is a function $f: A \rightarrow B$, where $A = \{i, h, a, l, j\}$ and $B = \{k, l, m, f\}$?

- (i) $\{(j, f), (l, f), (h, l), (a, k), (i, k)\}$
- (ii) $\{(j, f), (h, l), (a, k), (i, k), (f, l)\}$
- (iii) $\{\}$
- (iv) $\{(j, f), (l, f), (h, l), (a, k), (i, k), (f, l)\}$
- (v) $\{(j, f), (l, f), (a, k), (i, k)\}$

7. Which of the following relations does not represent a function $f: A \rightarrow B$, where $A = \{a, e, b, n, i\}$ and $B = \{c, l, k, h\}$?

- (i) $\{(n, l), (e, k), (i, c), (a, l), (b, l)\}$
- (ii) $\{(n, k), (a, k), (b, c), (i, k), (e, l)\}$
- (iii) $\{(e, l), (b, l), (i, h), (a, k), (n, k)\}$
- (iv) $\{(i, c), (e, l), (a, k), (a, l), (e, c)\}$
- (v) $\{(a, l), (b, h), (e, l), (i, l), (n, k)\}$

8. If $f(x) = (8x + 8)$, then find $f(9)$

- (i) 81 (ii) 80 (iii) 78 (iv) 79 (v) 82

-
9. If $f(x) = (6x + 4)$ and $g(y) = (6y + 6)$, then find $f(7)$, $g(5)$
- (i) 46,36 (ii) 47,37 (iii) 48,38 (iv) 45,35 (v) 44,33
-

10. If $f: A \rightarrow B$ is defined by $f(x) = (3x + 7)$ and $A = \{5, 7, 8, 10\}$, find the range
- (i) $\{37, 22, 31\}$
(ii) $\{9, 22, 31, 37\}$
(iii) $\{22, 28, 31, 37\}$
(iv) $\{13, 24, 37, 28\}$
(v) $\{-6, 31, 37, 28, -16, 22\}$
-

11. Which of the following relations is a function given ,
 $A = \{5, 8, 3, 10, 2, 6\}$ and $B = \{1, 2, 5, 10, 8, 7\}$?
- (i) $\{(5, 1), (8, 10), (3, 8), (2, 1), (6, 2)\}$
(ii) $\{(5, 1), (8, 10), (3, 8), (10, 2), (2, 1), (6, 2), (8, 3)\}$
(iii) $\{(5, 1), (8, 10), (3, 8), (2, 1), (6, 2), (3, 9)\}$
(iv) $\{(5, 1), (8, 10), (3, 8), (10, 2), (2, 1), (6, 2)\}$
(v) $\{(5, 1), (8, 10), (10, 2), (2, 1), (6, 2), (8, 3)\}$
-

12. If $f(t) = (9t^2 + 5t + 1)$ then find $f(7x - 4)$
- (i) $(440x^2 - 469x + 125)$
(ii) $(441x^2 - 469x + 125)$
(iii) $(443x^2 - 469x + 125)$
(iv) $(442x^2 - 469x + 125)$
(v) $(438x^2 - 469x + 125)$
-

- Find the range of $f: Z \rightarrow Z$ where $f(x) = (2x - 4)$
13. and domain of f is $\{x : -2 \leq x \leq 2\}$

(i) $\{-8, -6, -4, -2, 0\}$

(ii) $\{-8, -4, -2, 0\}$

(iii) $\{-8, -6, -4, 0, -3\}$

(iv) $\{-8, -6, -2, 0\}$

(v) $\{-8, -6, -4, -2, 1\}$

Let $f: \mathbb{R} \rightarrow \mathbb{R}$ be a function defined by given conditions

$$f(x) = (5x + 9) \text{ if } x < 3$$

14. $f(x) = (9x + 7) \text{ if } 3 \leq x \leq 4$

$$f(x) = (7x + 2) \text{ if } x > 4$$

find $f(x)$ where $x = 2$

(i) 25 (ii) 20 (iii) 19 (iv) 16 (v) 18

15. Find the range of $f: \mathbb{Z} \rightarrow \mathbb{Z}$ where $f(x) = (6x^2 + 6x + 6)$

and domain of f is $\{x : 3 \leq x \leq 7\}$

(i) $\{78, 126, 186, 342, 256\}$

(ii) $\{78, 126, 186, 258, 342\}$

(iii) $\{78, 126, 258, 342, 188\}$

(iv) $\{126, 186, 258, 342, 77\}$

(v) $\{78, 126, 186, 258, 343\}$

Assignment Key

- 1) (iv)
- 2) (i)
- 3) (ii)
- 4) (i)
- 5) (ii)
- 6) (i)
- 7) (iv)
- 8) (ii)
- 9) (i)
- 10) (iii)
- 11) (iv)
- 12) (ii)
- 13) (i)
- 14) (iii)
- 15) (ii)