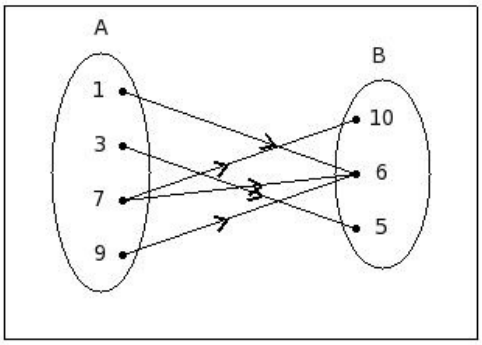
EduSahara™ Assignment

Name : Functions

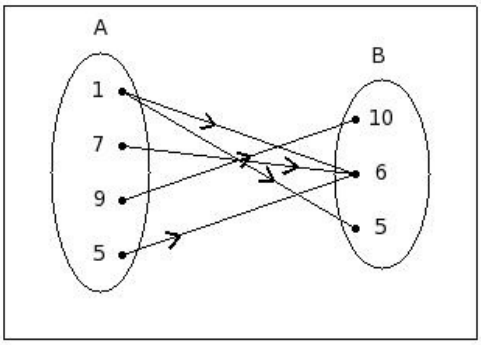
Chapter : Relations and Mapping

Grade : ICSE Grade VII

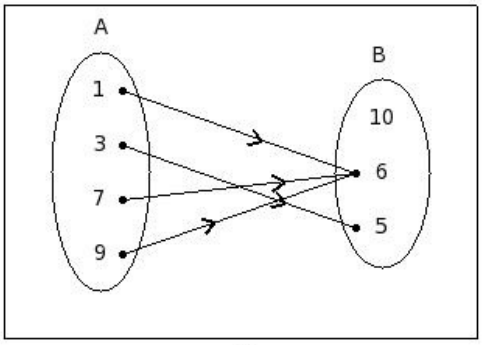
1. Which of the following relations $R: A \to B$ represent a function, given $A = \{1,3,7,9\}$ and $B = \{10,6,5\}$?



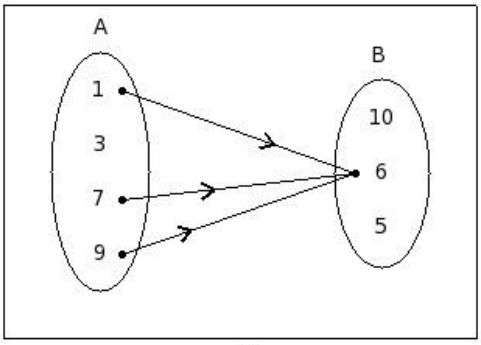
I



II



III



IV

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

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

(i) {(2,4),(8,5),(1,5),(9,5),(6,4),(10,7)} (ii) {(1,7),(2,7),(9,3),(6,7),(8,7),(10,7)}

(iii) {(6,7),(8,3),(9,7),(10,4),(1,3),(2,7)} (iv) {(9,5),(6,5),(2,4),(10,4),(1,3),(2,5)}

(v) {(9,7),(1,3),(6,4),(10,3),(2,3),(8,3)}

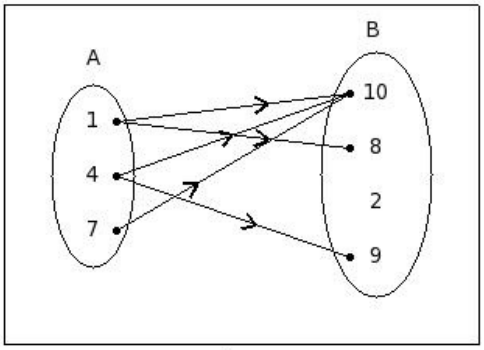
3. Which of the following does not represent a function $f: A \to B$, where $A = \{8,6,3,1,9,5\}$ and $B = \{4,2,7,10\}$?

(i) {(9,7),(3,10),(6,10),(1,4),(8,2),(5,10)} (ii) {(5,4),(9,4),(6,4),(3,4),(1,10),(8,2)}

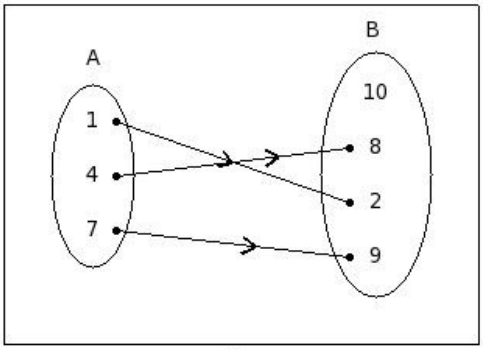
(iii) {(6,7),(1,4),(3,10),(8,2),(9,2),(5,7)} (iv) {(1,4),(8,7),(3,4),(5,2),(6,10),(9,7)}

(v) {(6,4),(9,2),(3,2),(8,4),(5,10)}

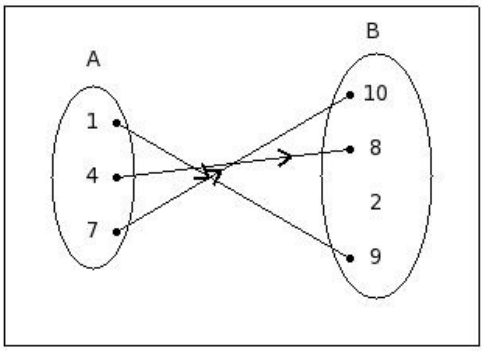
4. Which of the following does not represent a function $f: A \to B$, where $A = \{1,4,7\}$ and $B = \{10,8,2,9\}$?



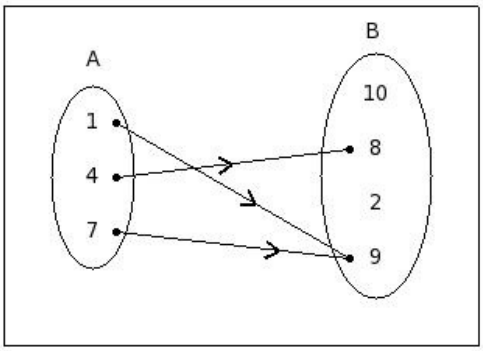
I



II



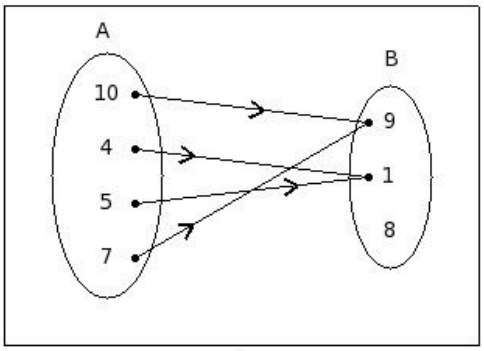
III



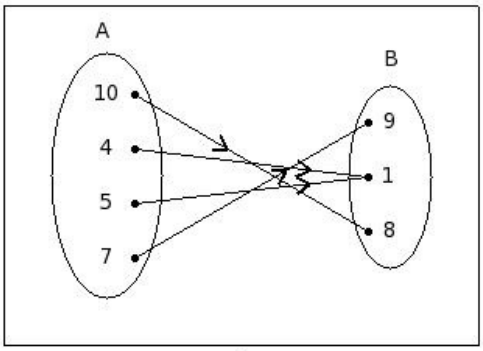
IV

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

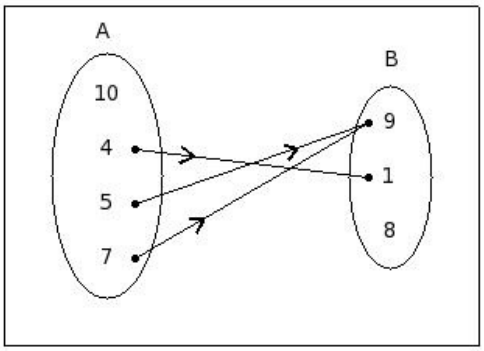
5. Which of the following does not represent a function $f: A \to B$, where $A = \{10,4,5,7\}$ and $B = \{9,1,8\}$?



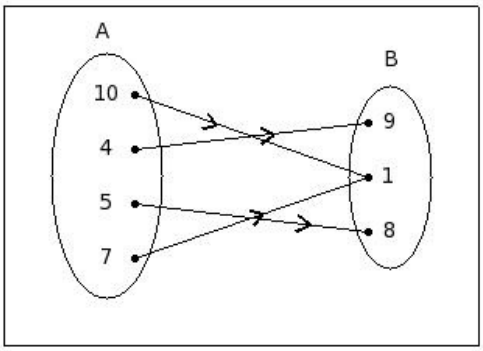
I



II



III



IV

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

6. Which of the following relations is a function $f: A \to B$, where $A = \{i,l,g,j,e,h\}$ and $B = \{e,d,h,b\}$?

(i) {(j,b),(h,h),(g,b),(i,d),(e,e),(l,h),(b,g)} (ii) {(j,b),(h,h),(g,b),(i,d),(e,e),(l,h)} (iii) {}

(iv) {(j,b),(h,h),(g,b),(e,e),(l,h)} (v) {(j,b),(h,h),(i,d),(e,e),(l,h),(b,g)}

7. Which of the following relations does not represent a function $f: A \to B$, where $A = \{m,c,h,f,g,a\}$ and $B = \{n,k,d,l\}$?

(i) $\{(c,d),(h,n),(g,d),(f,d),(h,k),(c,l)\}$ (ii) $\{(c,n),(g,k),(a,d),(h,n),(f,l),(m,k)\}$

(iii) $\{(m,d),(h,d),(c,n),(f,l),(g,n),(a,k)\}$ (iv) $\{(g,d),(c,n),(a,n),(m,n),(f,k),(h,d)\}$

(v) $\{(f,k),(a,l),(m,l),(g,n),(h,l),(c,d)\}$

8. If $f(x) = (3x+1)$, then find $f(2)$

(i) 8 (ii) 4 (iii) 6 (iv) 7 (v) 9

9. If $f(x) = (8x+2)$ and $g(y) = (2y+3)$, then find $f(6), g(1)$

(i) 49,4 (ii) 47,2 (iii) 53,8 (iv) 50,5 (v) 51,6

10. If $f: A \to B$ is defined by $f(x) = (2x+4)$ and $A = \{8,5,7,3\}$, find the range

(i) $\{18,10,20\}$ (ii) $\{14,18,35,10\}$ (iii) $\{-3,20,19,18\}$ (iv) $\{20,14,18,10\}$ (v) $\{-11,14,16,20,18,10\}$

11. Which of the following relations is a function given , $A = \{1,5,10,3,8\}$ and $B = \{9,10,8,4,3\}$?

(i) $\{(1,8),(5,3),(10,9),(3,10),(8,4)\}$ (ii) $\{(1,8),(5,3),(10,9),(3,10),(8,4),(3,5)\}$

(iii) $\{(1,8),(10,9),(3,10),(8,4),(3,5)\}$ (iv) $\{\}$ (v) $\{(1,8),(5,3),(3,10),(8,4)\}$

12. If $f(t) = (t^2+6t+2)$ then find $f(4x)$

(i) $(15x^2+24x+2)$ (ii) $(16x^2+24x+2)$ (iii) $(14x^2+24x+2)$ (iv) $(17x^2+24x+2)$ (v) $(18x^2+24x+2)$

13. Find the range of $f: Z \to Z$ where $f(x) = (6x-5)$ and domain of f is $\{x : -1 \leq x \leq 3\}$

(i) $\{-11,1,7,13,-4\}$ (ii) $\{-11,-5,1,7,13\}$ (iii) $\{-11,-5,1,13,6\}$ (iv) $\{-11,-5,1,7,11\}$ (v) $\{-5,1,7,13,-9\}$

14. Let $f: R \to R$ be a function defined by given conditions
$f(x) = (2x+9)$ if $x < 2$
$f(x) = (5x+9)$ if $2 \leq x \leq 4$
$f(x) = (3x+7)$ if $x > 4$
find $f(x)$ where $x = 3$

(i) 23 (ii) 15 (iii) 25 (iv) 24 (v) 16

15. Find the range of $f: Z \to Z$ where $f(x) = (4x^2+x-5)$ and domain of f is $\{x : 0 \leq x \leq 4\}$

(i) $\{-5,0,34,63,14\}$ (ii) $\{-5,0,13,34,63\}$ (iii) $\{-5,0,13,63,32\}$ (iv) $\{0,13,34,63,-3\}$ (v) $\{-5,13,34,63,-1\}$

Assignment Key

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