



Inverse of a Relation

• Example 1

Find the inverses of the following relations.

(a) $F = \{(1, 3), (2, 4), (3, 9)\}$

Its inverse is

$$F^{-1} = \{(3, 1), (4, 2), (9, 3)\}$$

(b) $G = \{(1, 3), (2, 6), (3, 6)\}$

Its inverse is

$$G^{-1} = \{(3, 1), (6, 2), (6, 3)\}$$

● ● ● CHECK YOURSELF 1

Write the inverses for each of the following relations.

a. $\{(-1, 2), (0, 3), (1, 4)\}$

b. $\{(2, 5), (3, 7), (4, 5)\}$

● ● ● CHECK YOURSELF ANSWER

1. (a) $\{(2, -1), (3, 0), (4, 1)\}$; (b) $\{(5, 2), (7, 3), (5, 4)\}$.

4.11 Exercises

Name _____

Section _____

Date _____

A N S W E R S

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____

Write the inverse of each relation.

1. $\{(2, 3), (3, 4), (4, 5)\}$
2. $\{(2, 3), (3, 4), (4, 3)\}$
3. $\{(1, 2), (2, 2), (3, 2)\}$
4. $\{(5, 9), (3, 7), (7, 5)\}$
5. $\{(2, 4), (3, 9), (4, 16)\}$
6. $\{(-1, 2), (0, 3), (1, 2)\}$
7. $\{(1, 6), (7, 8), (4, 12), (2, 15)\}$
8. $\{(1, 9), (1, 8), (1, 7), (1, 6)\}$
9. $\{(1, -4), (2, -1), (3, 4), (4, 11)\}$
10. $\{(-2, -8), (-1, -1), (0, 0), (1, 1), (2, 8)\}$
11. $\{(-8, 1), (-1, 2), (18, 3)\}$
12. $\{(13, -1), (3, 1), (-7, 3), (-17, 5)\}$