1.4   Practice

Inverse Relations and Functions

Find the inverse of each relation. Graph the given relation and its inverse.

1.

x	−2	−1	0	1
y	−3	−2	−1	0

2.

x	0	1	2	3
y	−3	−1	0	−2

3.

x	−3	−1	1	2
y	−1	0	1	3

4.

x	−3	−2	−1	0
y	3	2	1	0

Find the inverse of each function. Is the inverse a function?

5. $y = x^2 + 2$

6. $y = x + 2$

7. $y = 3(x + 1)$

8. $y = -x^2 - 3$

9. $y = 2x - 1$

10. $y = 1 - 3x^2$

11. $y = 5x^2$

12. $y = (x + 3)^2$

13. $y = 6x^2 - 4$

14. $y = 3x^2 - 2$

15. $y = (x + 4)^2 - 4$

16. $y = -x^2 + 4$

For each function, find the inverse and the domain and range of the function and its inverse. Determine whether the inverse is a function.

17. $f(x) = \dfrac{1}{6}x$

18. $f(x) = -\dfrac{1}{5}x + 2$

19. $f(x) = x^2 - 2$

20. $f(x) = x^2 + 4$

21. $f(x) = \sqrt{x - 1}$

22. $f(x) = \sqrt{3x}$

23. $f(x) = 3 - x$

24. $f(x) = (x + 1)^2$

25. $f(x) = \dfrac{1}{\sqrt{x}}$