Algebra 1 1.7

Determine whether a relation is a function.

Find function values

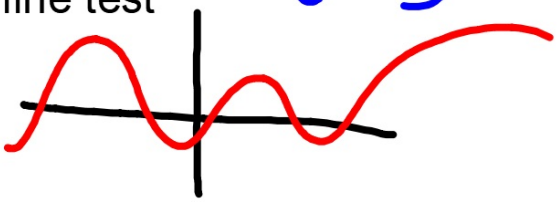
relation

function

→ discrete skip, jump, not traceable

→ continuous keeps going, traceable

vetical line test



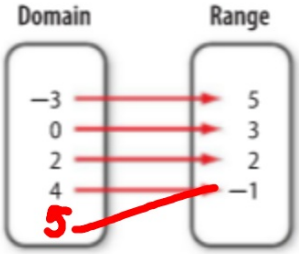
Every input has exactly one output!

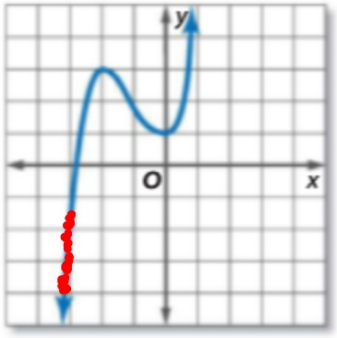
KeyConcept Function

Words A function is a relation in which each element of the domain is paired with *exactly* one element of the range.

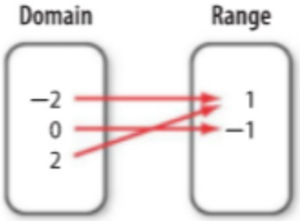
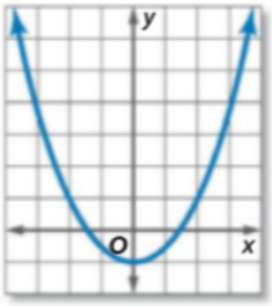
VLT

Examples





ConceptSummary Representations of a Function

Table	Mapping	Equation	Graph
		$f(x) = \frac{1}{2}x^2 - 1$	

Determine whether each relation is a function. Explain.

1.

2.

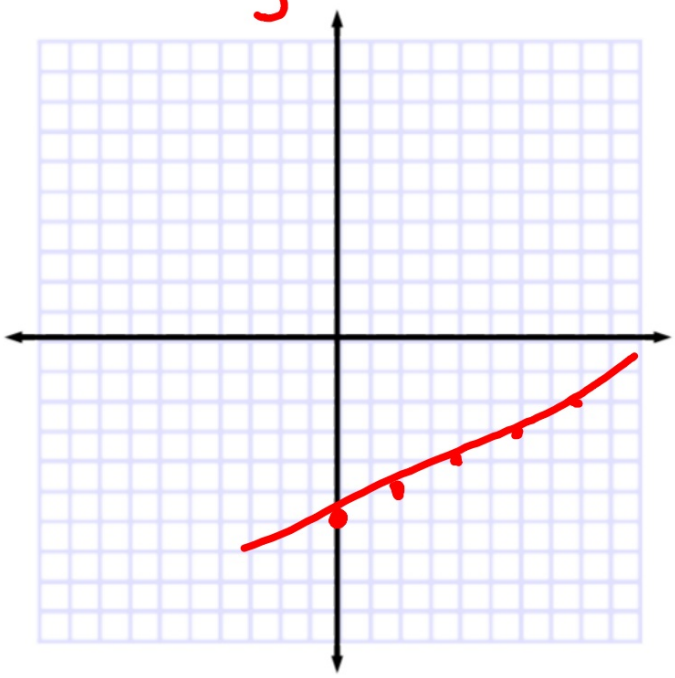
Domain	Range
2	6
5	7
6	9
6	10

3. $\{(2, 2), (-1, 5), (5, 2), (2, -4)\}$

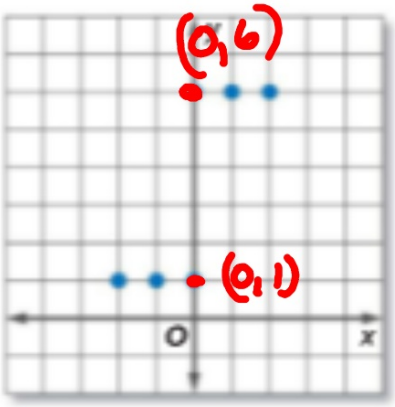
(2,2) (-1,5) (5,2)

4. $y = \frac{1}{2}x - 6$

$y = mx + B$



5.



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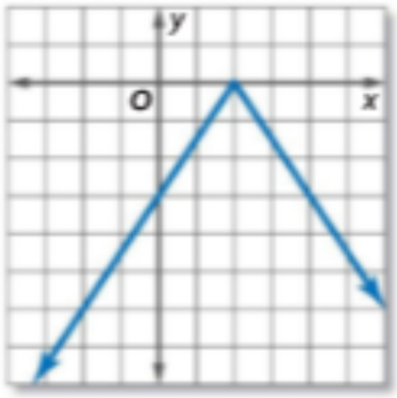

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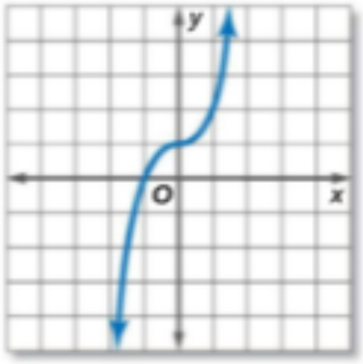
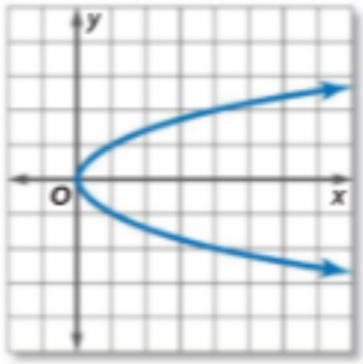


8.



5 If $f(x) = 6x + 7$ and $g(x) = x^2 - 4$, find each value.

11. $f(-3)$ = 6(-3) + 7

12. $f(m)$

13. $f(r - 2)$

14. $g(5)$

15. $g(a) + 9$

16. $g(-4t)$

17. $f(q + 1)$

18. $f(2) + g(2)$

19. $g(-b)$

$6(2) + 7$ $\quad$ $(2)^2 - 4$

$12 + 7$ $\quad$ $4 - 4$

$19 + 0 = 19$

If $f(x) = -2x - 3$ and $g(x) = x^2 + 5x$, find each value.

33. $f(-1)$ = -1

34. $f(6)$

35. $g(2)$

36. $g(-3)$

37. $g(-2) + 2$

38. $f(0) - 7$

$-2(\quad)-3 \qquad (\quad)^2+5(\quad)$

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