

**F.IF.A.1: Defining Functions 5**

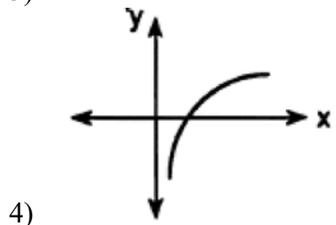
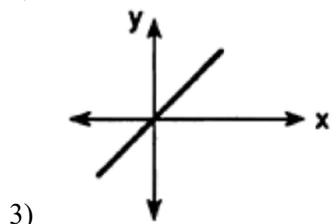
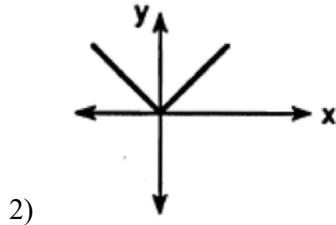
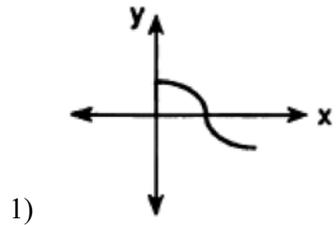
1 Which function is *not* one-to-one?

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

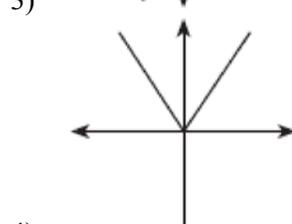
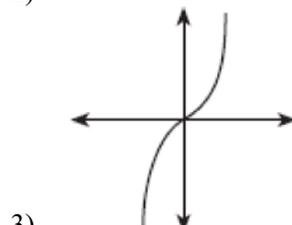
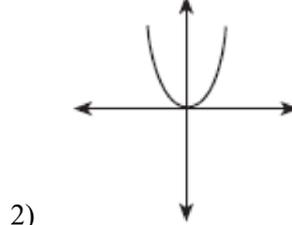
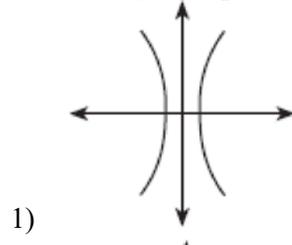
2 Which list of ordered pairs does *not* represent a one-to-one function?

- 1)  $(1, -1), (2, 0), (3, 1), (4, 2)$
- 2)  $(1, 2), (2, 3), (3, 4), (4, 6)$
- 3)  $(1, 3), (2, 4), (3, 3), (4, 1)$
- 4)  $(1, 5), (2, 4), (3, 1), (4, 0)$

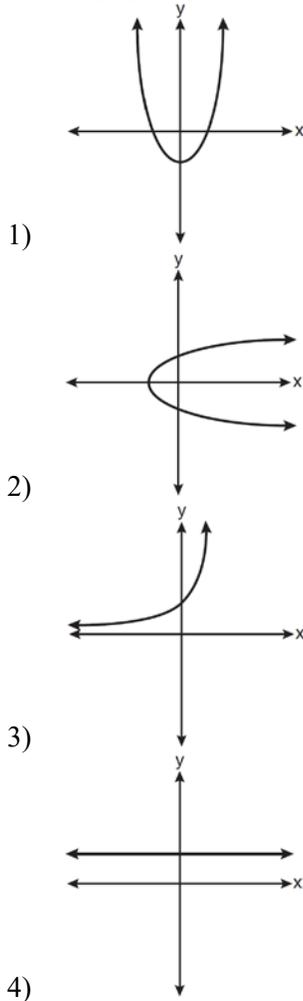
3 Which function is *not* one to one?



4 Which diagram represents a one-to-one function?



5 Which graph represents a one-to-one function?



6 Which function is one-to-one?

- 1)  $f(x) = |x|$
- 2)  $f(x) = 2^x$
- 3)  $f(x) = x^2$
- 4)  $f(x) = \sin x$

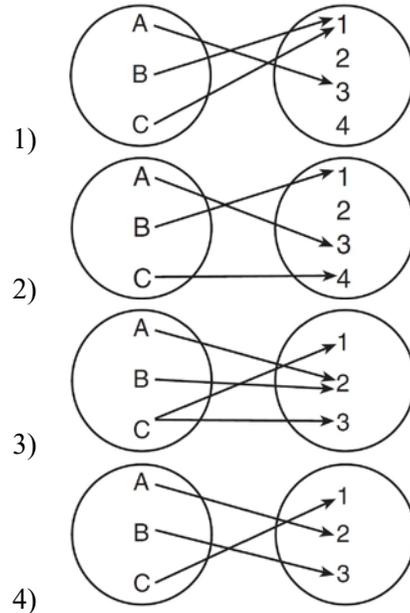
7 Which relation is one-to-one?

- 1)  $x = 3$
- 2)  $y = x^2 - 2x$
- 3)  $y = \log x$
- 4)  $y = |x|$

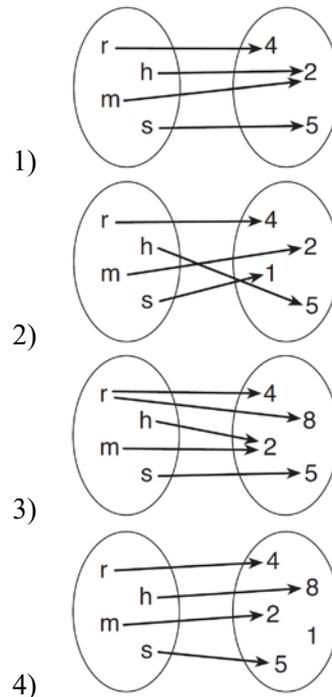
8 Which function is one-to-one?

- 1)  $k(x) = x^2 + 2$
- 2)  $g(x) = x^3 + 2$
- 3)  $f(x) = |x| + 2$
- 4)  $j(x) = x^4 + 2$

9 Which diagram represents a relation that is both one-to-one and onto?



10 Which relation is both one-to-one and onto?



**F.IF.A.1: Defining Functions 5****Answer Section**

1 ANS: 4

(4) fails the horizontal line test. Not every element of the range corresponds to only one element of the domain.

REF: fall0906a2

2 ANS: 3 REF: 061501a2

3 ANS: 2 REF: 089135siii

4 ANS: 3

In a one-to-one function, if  $f(x) = f(y)$ , then  $x = y$ . The graph of a one-to-one function passes the horizontal line test.

REF: 060216b

5 ANS: 3

(1) and (4) fail the horizontal line test and are not one-to-one. Not every element of the range corresponds to only one element of the domain. (2) fails the vertical line test and is not a function. Not every element of the domain corresponds to only one element of the range.

REF: 081020a2

6 ANS: 2 REF: 011225a2

7 ANS: 3

$y = \log x$  passes the horizontal line test.

REF: 081617a2

8 ANS: 2 REF: 061218a2

9 ANS: 4 REF: 061303a2

10 ANS: 2 REF: 011407a2