

**A.G.3: Defining Functions 1: Determine when a relation is a function, by examining ordered pairs and inspecting graphs of relations**

1 Which relation represents a function?

- 1)  $\{(0, 3), (2, 4), (0, 6)\}$
- 2)  $\{(-7, 5), (-7, 1), (-10, 3), (-4, 3)\}$
- 3)  $\{(2, 0), (6, 2), (6, -2)\}$
- 4)  $\{(-6, 5), (-3, 2), (1, 2), (6, 5)\}$

2 Which relation is a function?

- 1)  $\left\{\left(\frac{3}{4}, 0\right), (0, 1), \left(\frac{3}{4}, 2\right)\right\}$
- 2)  $\left\{(-2, 2), \left(-\frac{1}{2}, 1\right), (-2, 4)\right\}$
- 3)  $\{(-1, 4), (0, 5), (0, 4)\}$
- 4)  $\{(2, 1), (4, 3), (6, 5)\}$

3 Which set of ordered pairs represents a function?

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

4 Which relation is a function?

- 1)  $\{(2, 1), (3, 1), (4, 1), (5, 1)\}$
- 2)  $\{(1, 2), (1, 3), (1, 4), (1, 5)\}$
- 3)  $\{(2, 3), (3, 2), (4, 2), (2, 4)\}$
- 4)  $\{(1, 6), (2, 8), (3, 9), (3, 12)\}$

5 Which set is a function?

- 1)  $\{(3, 4), (3, 5), (3, 6), (3, 7)\}$
- 2)  $\{(1, 2), (3, 4), (4, 3), (2, 1)\}$
- 3)  $\{(6, 7), (7, 8), (8, 9), (6, 5)\}$
- 4)  $\{(0, 2), (3, 4), (0, 8), (5, 6)\}$

6 Which relation is *not* a function?

- 1)  $\{(1, 5), (2, 6), (3, 6), (4, 7)\}$
- 2)  $\{(4, 7), (2, 1), (-3, 6), (3, 4)\}$
- 3)  $\{(-1, 6), (1, 3), (2, 5), (1, 7)\}$
- 4)  $\{(-1, 2), (0, 5), (5, 0), (2, -1)\}$

7 Which relation is *not* a function?

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

8 Which set of ordered pairs is *not* a function?

- 1)  $\{(3, 1), (2, 1), (1, 2), (3, 2)\}$
- 2)  $\{(4, 1), (5, 1), (6, 1), (7, 1)\}$
- 3)  $\{(1, 2), (3, 4), (4, 5), (5, 6)\}$
- 4)  $\{(0, 0), (1, 1), (2, 2), (3, 3)\}$

9 Which set of ordered pairs does *not* represent a function?

- 1)  $\{(3, -2), (-2, 3), (4, -1), (-1, 4)\}$
- 2)  $\{(3, -2), (3, -4), (4, -1), (4, -3)\}$
- 3)  $\{(3, -2), (4, -3), (5, -4), (6, -5)\}$
- 4)  $\{(3, -2), (5, -2), (4, -2), (-1, -2)\}$

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1 ANS: 4

In (4), each element in the domain corresponds to a unique element in the range.

REF: 011018ia

2 ANS: 4

In (4), each element in the domain corresponds to a unique element in the range.

REF: 011105ia

3 ANS: 2

In (2), each element in the domain corresponds to a unique element in the range.

REF: 061116ia

4 ANS: 1 REF: 061413ia

5 ANS: 2 REF: 011514ia

6 ANS: 3

An element of the domain, 1, is paired with two different elements of the range, 3 and 7.

REF: 080919ia

7 ANS: 4

An element of the domain, 1, is paired with two different elements of the range, 1 and  $-1$ .

REF: 011405ia

8 ANS: 1 REF: 080403b

9 ANS: 2 REF: 060715b