

SOL Warm-Up
Graphing Calculator Active

A.5a Analyzing a table of ordered pairs for the existence of a pattern

1. Which of the following equations best describes the data in this table?

x	-2	-1	0	1	2
y	5	6	7	8	9

- A** $y = x + 7$
- B** $y = -x - 7$
- C** $y = x - 7$
- D** $y = -x + 7$

2. Which of the following data sets is best described by $y = -3x + 4$?

A	B	C	D
x	x	x	x
y	y	y	y
-2	-2	-2	-2
-1	-1	-1	-1
0	0	0	0
1	1	1	1
2	2	2	2
2	2	-10	-10
-1	1	7	-7
-4	4	4	-4
-7	7	1	-1
-10	10	-2	2

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A.5b Analyzing a table of ordered pairs for the existence of a pattern

1. Which of the following sets of data is best described by $y = \frac{1}{2}x - 1$?

A	B	C	D																																																
<table border="1" style="border-collapse: collapse; text-align: center;"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>-5</td><td>-3.5</td></tr><tr><td>-1</td><td>-1.5</td></tr><tr><td>0</td><td>-1</td></tr><tr><td>1</td><td>-.5</td></tr><tr><td>5</td><td>-1</td></tr></tbody></table>	x	y	-5	-3.5	-1	-1.5	0	-1	1	-.5	5	-1	<table border="1" style="border-collapse: collapse; text-align: center;"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>-4</td><td>-3</td></tr><tr><td>0</td><td>-1</td></tr><tr><td>2</td><td>0</td></tr><tr><td>6</td><td>2</td></tr><tr><td>9</td><td>3.5</td></tr></tbody></table>	x	y	-4	-3	0	-1	2	0	6	2	9	3.5	<table border="1" style="border-collapse: collapse; text-align: center;"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>-3</td><td>-2.5</td></tr><tr><td>-1</td><td>1.5</td></tr><tr><td>0</td><td>-1</td></tr><tr><td>3</td><td>.5</td></tr><tr><td>7</td><td>3</td></tr></tbody></table>	x	y	-3	-2.5	-1	1.5	0	-1	3	.5	7	3	<table border="1" style="border-collapse: collapse; text-align: center;"><thead><tr><th>x</th><th>y</th></tr></thead><tbody><tr><td>-3</td><td>-7</td></tr><tr><td>-2</td><td>-5</td></tr><tr><td>0</td><td>-1</td></tr><tr><td>4</td><td>7</td></tr><tr><td>8</td><td>17</td></tr></tbody></table>	x	y	-3	-7	-2	-5	0	-1	4	7	8	17
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2. Which of the following equations best represents the following pattern?

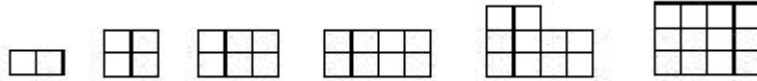


- A** $y = x$
- B** $y = x^2$
- C** $y = x^3$
- D** $y = x^4$

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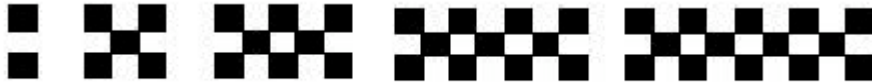
A.5c Analyzing a table of ordered pairs for the existence of a pattern?

1. Which of the following equations best represents the following pattern?



- A $y = 2x$
- B $y = 2x + 4$
- C $y = 2x + 1$
- D $y = 2x - 1$

2. Which of the following equations best represents the following pattern?



- A $y = 3x$
- B $y = 3x + 4$
- C $y = 3x + 1$
- D $y = 3x - 1$

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A.5d Writing a linear equation to represent patterns

1. Which equation best represents the following pattern?

$$\{-7, 1, 9, 17, 25, 33, \dots\}$$

- A $y = 8x + 7$
- B $y = 8x - 7$
- C $y = 8x - 15$
- D $y = 8x + 15$

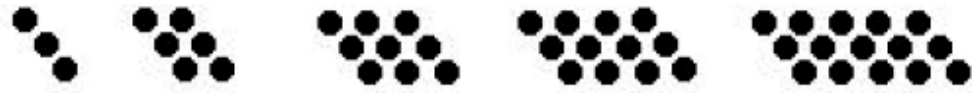
2. Which equation best represents the following pattern?

$$\{-7, -11, -15, -19, -23, -27, \dots\}$$

- A $y = -4x + 3$
- B $y = -4x - 3$
- C $y = 4x - 3$
- D $y = 4x + 3$

3. Which equation best represents the following pattern?

- A $y = x + 3$
- B $y = -3x$
- C $y = 3x$
- D $y = 3x + 3$



4. Which equation best represents the following pattern?

- A $y = 3x$
- B $y = 3x + 1$
- C $y = 3x - 1$
- D $y = 3x + 2$



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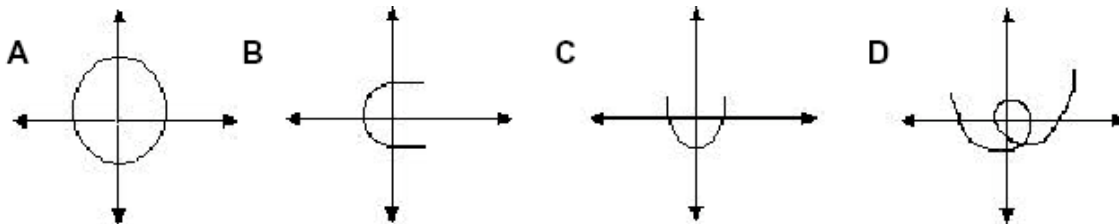
Graphing Calculator Active

A.5e Determining whether a relation is a function.

1. Which of the following is a function?

<p>A</p> <table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">x</td> <td style="border-right: 1px solid black; padding: 5px;">y</td> <td style="padding: 5px;">B</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">1</td> <td style="border-right: 1px solid black; padding: 5px;">12</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">5</td> <td style="border-right: 1px solid black; padding: 5px;">17</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">-9</td> <td style="border-right: 1px solid black; padding: 5px;">19</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">-5</td> <td style="border-right: 1px solid black; padding: 5px;">42</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">-9</td> <td style="border-right: 1px solid black; padding: 5px;">43</td> <td style="padding: 5px;"></td> </tr> </table>	x	y	B	1	12		5	17		-9	19		-5	42		-9	43		<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">x</td> <td style="border-right: 1px solid black; padding: 5px;">y</td> <td style="padding: 5px;">C</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">2</td> <td style="border-right: 1px solid black; padding: 5px;">19</td> <td style="padding: 5px;">3</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">6</td> <td style="border-right: 1px solid black; padding: 5px;">-17</td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;">-8</td> <td style="padding: 5px;">-18</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;">-4</td> <td style="padding: 5px;">2</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;">-3</td> <td style="padding: 5px;">-17</td> </tr> </table>	x	y	C	2	19	3	6	-17			-8	-18		-4	2		-3	-17	<table style="border-collapse: collapse; width: 100%;"> <tr> <td style="border-right: 1px solid black; padding: 5px;">x</td> <td style="border-right: 1px solid black; padding: 5px;">y</td> <td style="padding: 5px;">D</td> <td style="border-right: 1px solid black; padding: 5px;">x</td> <td style="padding: 5px;">y</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">6</td> <td style="border-right: 1px solid black; padding: 5px;">4</td> <td style="padding: 5px;">-1</td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">-7</td> <td style="border-right: 1px solid black; padding: 5px;">-3</td> <td style="padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;">8</td> <td style="padding: 5px;">-17</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;">-7</td> <td style="padding: 5px;">-9</td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">-6</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;">-3</td> <td style="border-right: 1px solid black; padding: 5px;">-12</td> <td style="padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">-2</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;">-1</td> <td style="padding: 5px;">11</td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">4</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">-17</td> </tr> <tr> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;"></td> <td style="border-right: 1px solid black; padding: 5px;"></td> <td style="padding: 5px;">-7</td> </tr> </table>	x	y	D	x	y	6	4	-1			-7	-3		8	-17		-7	-9		-6	-3	-12			-2		-1	11		4					-17					-7	
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2. Which of the following is a function?



3. Which of the following is a function?

- A** $\{(4,1), (4,2), (-3,3), (-2,3), (6,3)\}$
- B** $\{(4,1), (-2,2), (2,3), (4,3), (5,2)\}$
- C** $\{(6,1), (9,2), (12,3), (15,4), (18,5)\}$
- D** $\{(19,1), (20,2), (21,3), (20,1), (19,2)\}$

4. Which of the following is **NOT** a function?

- A** $\{(6,4), (7,4), (8,4), (9,4), (10,4)\}$
- B** $\{(6,1), (8,3), (10,3), (13,1), (19,3)\}$
- C** $\{(6,2), (6,6), (6,10), (6,14), (6,18)\}$
- D** $\{(4,1), (3,2), (2,3), (1,4), (0,5)\}$

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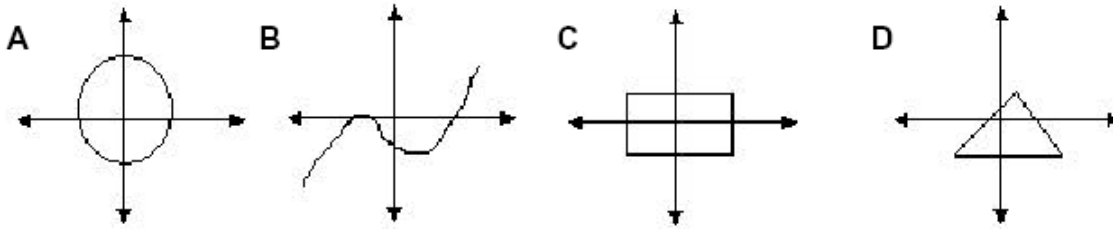
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A.5f Determining whether a relation is a function

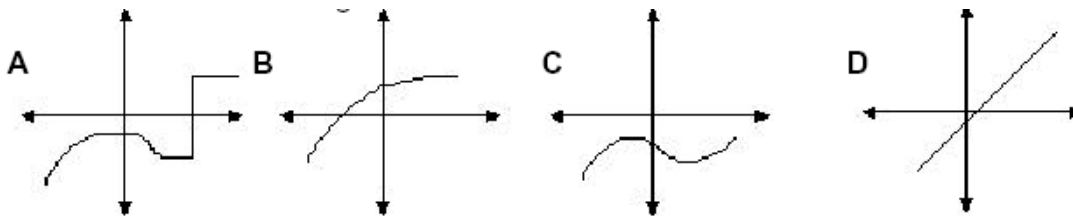
1. Which of the following is **NOT** a function?

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2. Which of the following is a function?



3. Which of the following is **NOT** a function?



4. Which of the following is **NOT** a function?

- A** $\{(4,0), (0,-1), (2,0), (1,1), (3,0)\}$
- B** $\{(1,3), (2,3), (3,6), (4,6), (5,8)\}$
- C** $\{(3,1), (3,2), (6,3), (6,4), (8,5)\}$
- D** $\{(6,4), (7,6), (8,4), (9,6), (5,4)\}$

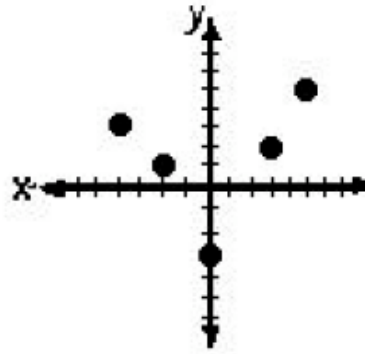
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A.5g Identifying domain and range

Use the graph on the right for problems 1 to 3:

1. What is the domain of the function?

- A $\{-4, -2, 0, 3, 5\}$
- B $\{-5, -4, 0, 4, 6\}$
- C $\{-3, -1, 2, 4\}$
- D $\{-4, -1, 0, 2, 3\}$



2. What is the range of the function?

- A $\{-2, 1, 2, 4, 6\}$
- B $\{-6, 0, 1, 2, 3\}$
- C $\{-3, 1, 2, 3, 5\}$
- D $\{-5, -3, -2, 5\}$

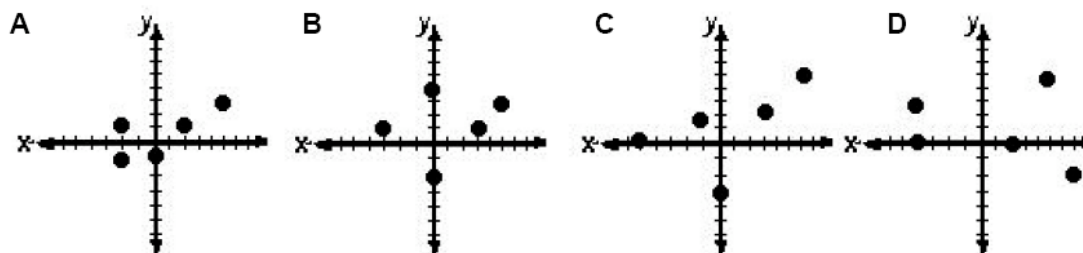
3. What is the value of y when $x = -2$?

- A 0
- B 1
- C 3
- D 5

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A.5h Identifying whether a relation is a function

1. Which of the following graphs is a function?



the following relations is **not** a function?

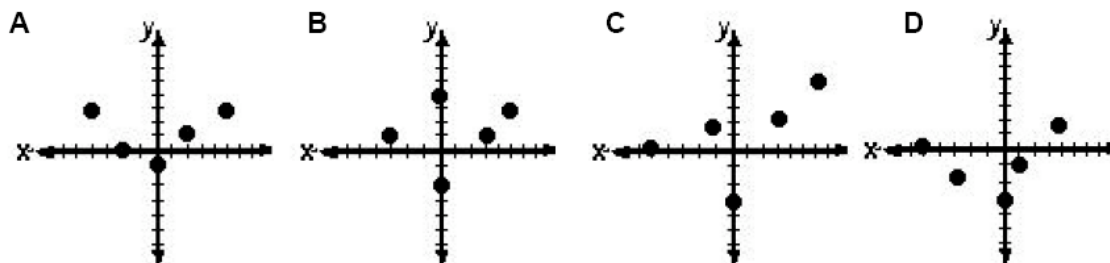
A $\{(1,-2),(3,-2),(-3,0)\}$

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

C $\{(-3,3),(-1,1),(0,-3)\}$

D $\{-3,3),(1,-5),(-3,-9)\}$

3. Which of the following relations is **not** a function?



4. Which of the following relations is a function?

A

x	y
-1	-4
0	3
2	-1
-1	3

B

x	y
-4	-1
-3	0
-1	2
-1	1

C

x	y
-1	2
0	3
2	-5
0	0

D

x	y
-1	-1
0	0
2	2

2. Which of

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A.15a Finding values of a function for elements in the domain

1. What is $f(-2)$ when $f(x) = 2x^2 - 6x + 10$?

- A -20
- B -10
- C 6
- D 30

2. Which table shows the function $f(x) = -x^2 + 4$?

A

x	-2	-1	3	4
y	8	5	-2	-4

B

x	-2	-1	3	4
y	6	5	1	0

C

x	-2	-1	3	4
y	0	3	-5	-12

D

x	-2	-1	3	4
y	4	6	-8	-10

3. What are the values of $f(x) = 2x^2 - x + 1$ when x is $\{-2, 0, 2\}$?

- A $\{11, 1, 7\}$
- B $\{-9, -2, 8\}$
- C $\{7, -4, 7\}$
- D $\{9, 2, 8\}$

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A.15b Finding values of a function for elements in the domain

1. Which is the value of $f(x) = x^2 - x - 1$ when $x = -1$?

- A -3
- B -2
- C -1
- D 1

2. Which table shows the function $f(x) = -x^2 + x + 1$?

A

x	-5	-1	0	1	5
y	-29	-1	1	-1	-19

B

x	-4	0	2	3	4
y	-19	1	-1	-5	-10

C

x	-3	-2	0	3	6
y	-11	-5	1	-5	-29

D

x	-2	-1	0	4	5
y	-5	-1	1	-11	-18

3. What are the values of $f(x) = 1 - 4x - 5x^2$ when x is $\{-5, 0, 5\}$?

- A $\{-104, 1, 144\}$
- B $\{-104, 1, -142\}$
- C $\{-103, 1, -144\}$
- D $\{-103, 1, -143\}$

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A.15c Identifying zeros of a function

1. What are the zeros of $f(x) = 2x^2 + 5x - 3$?

A $\frac{1}{2}$ and 3

B $-\frac{1}{2}$ and 3

C $-\frac{1}{2}$ and -3

D $\frac{1}{2}$ and -3

2. What are the zeros of $f(x) = -6x^2 + 23x - 7$?

A $\frac{1}{3}$ and -3.5

B $-\frac{1}{3}$ and -3.5

C $\frac{1}{3}$ and 3.5

D $-\frac{1}{3}$ and 3.5

3. Which function has zeros at 3 and -4?

A $f(x) = x^2 + x - 12$

B $f(x) = x^2 + x + 12$

C $f(x) = -x^2 + 7x - 12$

D $f(x) = -x^2 - 7x + 12$

4. Which function has the zeros at $-\frac{1}{3}$ and $-\frac{3}{4}$?

A $f(x) = 8x^2 - 14x - 3$

B $f(x) = 8x^2 + 10x - 3$

C $f(x) = 8x^2 - 10x + 3$

D $f(x) = 8x^2 + 10x + 3$