

Whose Data Set Am I?

Teacher Notes

If you are given a set of ordered pairs, how do you know the function that includes them? How many ways can you find the answer and which ones take the least amount of work?

Let's look at a couple of different ways to find the answer.

Which function includes the data set  $\{(0, 8), (1, 7), (2, 6), (3, 5)\}$ ?

- F**  $f(x) = x + 8$
- G**  $f(x) = x - 8$
- H**  $f(x) = 8 - x$
- J**  $f(x) = -8 - x$

You can use the ASK capacity of the Table to find the correct function.

<pre> Plot1 Plot2 Plot3 Y1 X+8 Y2 = Y3 = Y4 = Y5 = Y6 = Y7 =                 </pre>	<pre> TABLE SETUP TblStart=0 ΔTbl=1 Indent: Auto Depend: ASK                 </pre>	<table border="1" style="border-collapse: collapse; width: 100%;"> <thead> <tr> <th style="width: 33%;">X</th> <th style="width: 33%;">Y1</th> <th style="width: 33%;"></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>8</td> <td></td> </tr> <tr> <td>1</td> <td>9</td> <td></td> </tr> </tbody> </table> <p>X=</p>	X	Y1		0	8		1	9	
X	Y1										
0	8										
1	9										

The first ordered pair is correct but the second is not. Try the next option.

<pre> Plot1 Plot2 Plot3 Y1 X-8 Y2 = Y3 = Y4 = Y5 = Y6 = Y7 =                 </pre>	<table border="1" style="border-collapse: collapse; width: 100%;"> <thead> <tr> <th style="width: 33%;">X</th> <th style="width: 33%;">Y1</th> <th style="width: 33%;"></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>-8</td> <td></td> </tr> <tr> <td>1</td> <td>-7</td> <td></td> </tr> </tbody> </table> <p>X=0</p>	X	Y1		0	-8		1	-7		<p>Neither value is correct.</p>
X	Y1										
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1	-7										

<pre> Plot1 Plot2 Plot3 Y1 8-X Y2 = Y3 = Y4 = Y5 = Y6 = Y7 =                 </pre>	<table border="1" style="border-collapse: collapse; width: 100%;"> <thead> <tr> <th style="width: 33%;">X</th> <th style="width: 33%;">Y1</th> <th style="width: 33%;"></th> </tr> </thead> <tbody> <tr> <td>0</td> <td>8</td> <td></td> </tr> <tr> <td>1</td> <td>7</td> <td></td> </tr> <tr> <td>2</td> <td>6</td> <td></td> </tr> <tr> <td>3</td> <td>5</td> <td></td> </tr> </tbody> </table> <p>X=</p>	X	Y1		0	8		1	7		2	6		3	5		<p>Answer H gives the correct values.</p>
X	Y1																
0	8																
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Another method is to evaluate on the home screen. Use { } to enter all the input values at the same time.

```
{0,1,2,3}+8
{8 9 10 11}
```

You can recall the last function by pressing **2<sup>nd</sup> ENTER** and then editing the function.

```
{0,1,2,3}+8
{8 9 10 11}
{0,1,2,3}-8
{-8 -7 -6 -5}
■
{0,1,2,3}+8
{8 9 10 11}
{0,1,2,3}-8
{-8 -7 -6 -5}
8-{0,1,2,3}
{8 7 6 5}
```

This function produces the correct output values for the ordered pairs.

Use the method you prefer to find the answer in the question below.

**13** Which function includes the data set  $\{(2, 4), (6, 6), (12, 9)\}$ ?

A  $y = 2x$

B  $y = \frac{x}{2}$

C  $y = 2x - 9$

D  $y = \frac{x}{2} + 3$

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The last answer choice generates the correct set of output values.

Or the student can use the home screen.

$(2, 6, 12)X$ $(4 \ 12 \ 24)$ ■	$(2, 6, 12)X$ $(4 \ 12 \ 24)$ $(2, 6, 12)/2$ $(1 \ 3 \ 6)$ ■	$(2, 6, 12)X$ $(4 \ 12 \ 24)$ $(2, 6, 12)/2$ $(1 \ 3 \ 6)$ $2(2, 6, 12)/2 - 9$ $(-7 \ -3 \ 3)$ ■
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To recall the second function most efficiently, press 2<sup>nd</sup> ENTER twice and edit.

$(4 \ 12 \ 24)$ $(2, 6, 12)/2$ $(1 \ 3 \ 6)$ $2(2, 6, 12)/2 - 9$ $(-7 \ -3 \ 3)$ $(2, 6, 12)/2 + 3$ $(4 \ 6 \ 9)$
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It is more efficient for students to work the question and use the handheld to check the answer than to check all the possible answers.