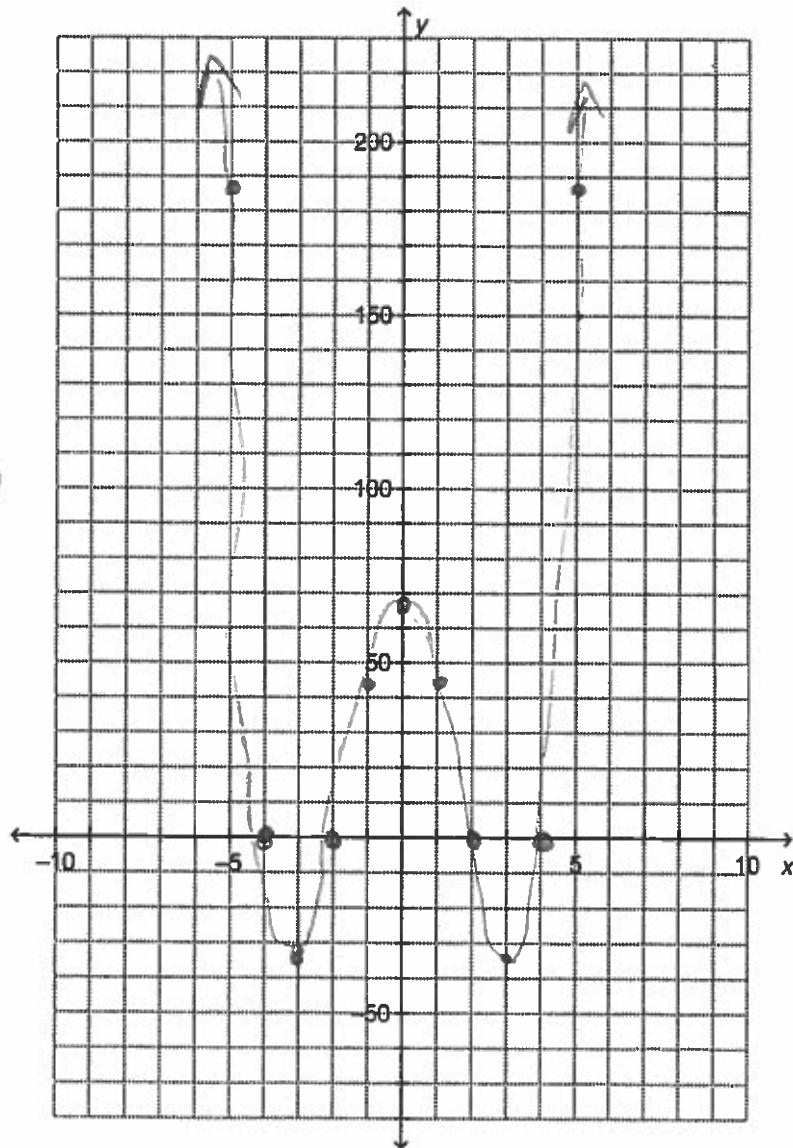


CONCEPTS:

Key

1. Create the graph for $y = (x+4)(x-4)(x+2)(x-2)$ by generating a table then plotting the points. Verify what you have created by checking it in your graphing calculator. Describe the graph completely using the prompts.

x	-5	-4	-3	-2	-1	0	1	2	3	4	5
y	189	0	-35	0	45	64	45	0	-35	0	189



Shape (describe what it looks like):

W

Symmetry:

Yes at $x=0$

x-intercept(s):

-4, -2, 2, 4

y-intercept(s):

0, 64

maximum y-value:

none

minimum y-value:

-35

Domain:

\mathbb{R}

Range:

$y \geq -35$

2. Find the missing input or output values for the following functions. If there is no value, explain why not.

a. $x = -2$

$f(x) = |x^2 - 16|$

$f(x) =$

$f(x) = \underline{12}$

b. $x = 10$

$f(x) = \frac{4}{\sqrt{x-1}}$

$f(x) =$

$f(x) = \underline{4/3}$

c. $x = ?$

$f(x) = 3x - 7$

$f(x) = -1$

$-1 = 3x - 7$
 $6 = 3x$

$x = \underline{2}$

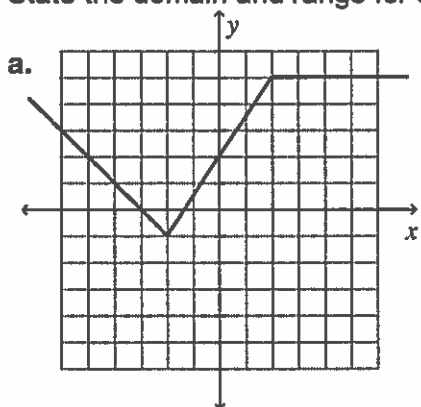
d. $x = 1$

$f(x) = \sqrt{x-10}$

$f(x) =$

$f(x) = \underline{\text{undefined}}$

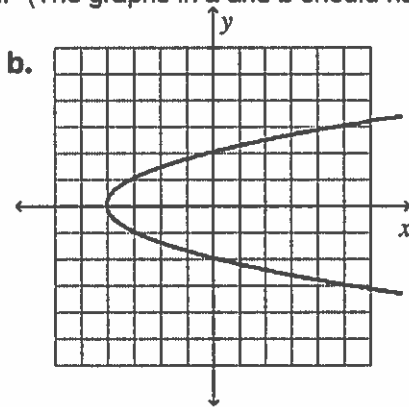
3. Determine whether each of the following graphs is a function or not. State the domain and range for each. (The graphs in a and b should have arrows on the ends.)



Function or not? yes

D: \mathbb{R}

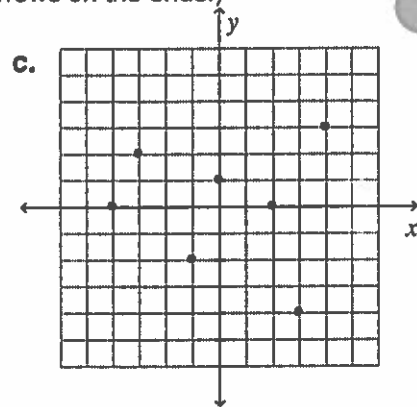
R: $y \geq -1$



Function or not? no

D: $x \geq -4$

R: \mathbb{R}



Function or not? yes

D: $\{-4, -3, -1, 0, 2, 3, 4\}$

R: $\{-4, -2, 0, 1, 2, 3\}$

For the graphs above, explain how you determined which graphs were functions and which were not.

In Functions there is only one output for every input.
Also could use vertical line test to look for