Announcement: Friday (2/2 only) office hours: 9:10 - 10:25

All of 3.2 (pp. 34-41)

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3.2.3

\[ \{3,10\}, \{7,10\}, \{3,1\}, \{-6,-8\} \]

Domains: \{-3, 7, 3, -6, -8\}

Range: \{10, 1, -8\}

Function? Yes

\[ \{\sqrt{3}, 5, 6, 5, 8\} \]

Domain: \{9\}

Range: \{5, 6, 5, 8\}

Function? No

Vertical Line Test: 3.2.2a, 3.2.3b, 3.2.3c

Function: Yes

not a function! Not a function!
Announcement: Friday (2/2 only) office hours: 9:10 - 10:25

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3.2.17

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>-9</td>
<td>-3, -6, 5, 50</td>
</tr>
</tbody>
</table>

3.2.3

\[ \{(3, 10), (7, 10), (3, 1), (-6, -8)\} \]

Domain: \{-3, 7, 3, -6\}
Range: \{10, 1, -8\}
Function: Yes

Domain: \{-9\}
Range: \{3, -6, 5, 50\}
Function: No

Vertical Line Test: 3.2.2a, 3.2.35, 3.2.37

Function: Yes, not a function! NOT a function!
Step 1: Graph the equation.

Step 2: Apply the vertical line test.

Domain: \([1, \infty)\)

Range: \((-\infty, \infty)\)

3.2.35

Domain: \([-1, 7]\)

Range: \([0, 8]\)
(3.2.55)
\[ f(x) = 4x - 4 \quad g(x) = 4x^2 - 7x + 3 \]

(a) draw function diagram

\[
\begin{array}{c|c|c}
\text{Accept input} & \text{Multiply } x \text{ by } 4 \times \text{Subtract } 4 \times \text{Deliver output} & \rightarrow \\
\hline
x & f(x) = 4x - 4 & \rightarrow \\
\end{array}
\]

(b) Find \( f(1) \)
\[
f(1) = 4(1) - 4 = 0
\]

(c) \( g(-4) \)
\[
g(-4) = 4(-4)^2 - 7(-4) + 3 = 4(16) + 28 + 3 = 64 + 28 + 3 = 95
\]

3.2.87
\[
x = \# \text{ of years after } 2000
\]
\[ f(x) = 0.22x + 10.9 \quad \text{\( f(x) \) = value in billions of dollars of demand production.} \]
\[ F(21) = 0.22(21) + 10.9 \]
\[ F(21) = 46.2 + 10.9 \quad \text{2021 is } 21 \text{ years after } 2000
\]
\[ f(21) = 15.52 \text{ billion dollars.} \]