

Algebra 1
Domain and Range

Domain and Range | A1-U04-P06
96 problems · Four activity formats

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Topic focus
Across 96 tasks this topic asks for justified domain or range set.
8 PDFs and a README; 60 buyer pages.

Algebra 1

Domain and Range

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. Give the whole requested response, including any reasoning the question asks for.

Merge the overlapping output bands. pieces: continuous curve attaining $-3 \leq y \leq 2$, continuous curve attaining $1 \leq y \leq 6$ _____ Bank label: _____	Read the natural graph domain. graph: $y = \sqrt{x+2}$, including endpoint $(-2, 0)$ and arrow right _____ Bank label: _____
Map the restricted ray through h. rule: $h(x) = 3x - 2$; domain: $x \geq 1$ _____ Bank label: _____	Project the vertical segment onto the x-axis. graph: vertical segment at $x = -4$ from $y = -2$ to $y = 6$, endpoints filled _____ Bank label: _____
List the attained outputs from the finite restriction. rule: $r(x) = 2x$; domain: $-3, 0, 4$ _____ Bank label: _____	Determine whether the apparent break removes an input. pieces: curve on $-4 \leq x < -1$, filled point at $x = -1$, curve on $-1 < x \leq 3$ _____ Bank label: _____
Account for decreasing orientation when finding the range. rule: $g(x) = 7 - x$; domain: $-1 \leq x \leq 3$ _____ Bank label: _____	Find the range with decreasing orientation and mixed endpoints. rule: $C(x) = -3x + 1$; domain: $-2 < x \leq 3$ _____ Bank label: _____

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Begin at START. Answer the card, then find the matching final answer at the top of another card. Use the recording sheet for your reasoning. Visit each card once and continue to FINISH.

Incoming: Range $\{-3\}$ union $[0, 6]$. Remove the undefined member of the finite domain. rule: $S(x) = \frac{2}{x+2}$; stated domain: $-4, -2, 0, 3$ Your response: _____	Incoming: Domain $\{-4, 0, 3\}$. Separate viewing window labels from the graph domain. graph: filled curve only on $-2 \leq x \leq 2$; coordinate window and tick marks extend from -10 to 10 Your response: _____
Incoming: Range $[-4, 5]$. Unite repeated vertical bands and the isolated value. pieces: segment with range $[0, 4]$, arc with range $[2, 6]$, point at height -3 Your response: _____	Incoming: Use x in $(-2, 3]$. Reverse the inequality when solving the radicand condition. rule: $J(x) = \sqrt{8 - 2x}$ Your response: _____
Incoming: Domain $(-\infty, 5]$. Account for an endpoint height restored elsewhere. graph: vertical segment with open endpoints $y = -3$ and $y = 5$, plus a filled point at $y = -3$ elsewhere Your response: _____	Incoming: The domain is $[-2, 4]$. What output set does the square-root graph attain? graph: $y = \sqrt{x+2}, x \geq -2$ Your response: _____

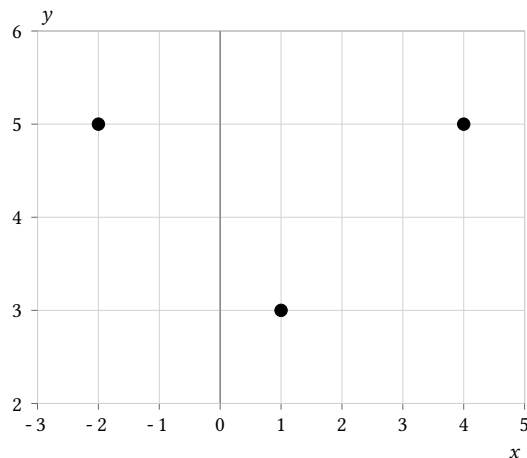
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Evaluate the supplied statement or method. Say whether it is correct, repair it if it is not, and verify the result exactly. Not every prompt contains an error.

Correct the swapped projections.



Supplied solution steps:

1. domain $\{3, 5\}$
2. range $\{-2, 1, 4\}$

Audit the unattained codomain label.

declaration: $f: \{a, b\} \rightarrow \{1, 2, 3\}$; values: $f(a) = 1, f(b) = 3$

Supplied solution steps:

1. range $\{1, 2, 3\}$

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Full Worked Solutions - excerpt

Worked example

Problem. Merge the overlapping output bands.

pieces: continuous curve attaining $-3 \leq y \leq 2$, continuous curve attaining $1 \leq y \leq 6$

Answer. Range $[-3, 6]$.

Explanation and check.

The bands overlap from 1 through 2, so their union has no vertical gap.

Worked example

Problem. Read the natural graph domain.

graph: $y = \sqrt{x + 2}$, including endpoint $(-2, 0)$ and arrow right

Answer. Domain $[-2, \text{infinity})$.

Explanation and check.

The square-root graph starts at included input -2 and continues right.