

Algebra 1
Function Values, Inputs, Domain & Range | Algebra 1 | 3-Topic Bundle

3-topic bundle | 288 problems | Four activity formats

01 Evaluating Functions from Representations

[View individual product and its full preview](#)

02 Finding Inputs from Function Outputs

[View individual product and its full preview](#)

03 Domain and Range

[View individual product and its full preview](#)

In every topic

Answer Bank Challenge	24 tasks
Grid Rounds	24 tasks
Match & Move	24 cards
Error Analysis & Strategy	24 tasks
Quick Answer Key and Full Worked Solutions	included
Teacher / Parent Use Guide and Terms of Use	included

Product previews

The following preview pages show the cover, all four activity formats, and worked examples for each included resource, in the listed order.

24 PDFs and 3 READMEs; 204 buyer PDF pages across the 3 products.

Preview pages are not included in the buyer page count. Check the list against resources you already own.

This is a fixed collection of the listed products. Purchase includes the existing individual resource files. To open a product's online preview, follow its title link and select View Preview.

Algebra 1
Evaluating Functions from Representations

Evaluating Functions | A1-U04-P04
96 problems · Four activity formats

01	Answer Bank Challenge	24 tasks
02	Grid Rounds	24 tasks
03	Match & Move	24 cards
04	Error Analysis & Strategy	24 tasks
05	Quick Answer Key	96 answers
06	Full Worked Solutions	96 solutions
07	Teacher / Parent Use Guide	included
08	Terms of Use & License	included

Topic focus
Across 96 tasks this topic asks for exact function value or justified information status.
8 PDFs and a README; 64 buyer pages.

Algebra 1

Evaluating Functions
from Representations

Name: _____ Date: _____ Class: _____

Answer each question and record the matching bank letter. Give exact values. A value without its unit is not a complete answer.

Use the rule $B(x) = 2x - 3 + 1$. Its domain is all real numbers. Evaluate $B(-1)$ in the correct operation order. Bank label: _____	Interpret exact numerical equality to find $L(0.5)$. <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <th style="text-align: left;">Input</th> <th style="text-align: left;">Output</th> </tr> <tr> <td>$\frac{1}{2}$</td> <td>6</td> </tr> <tr> <td>2</td> <td>9</td> </tr> </table> Bank label: _____	Input	Output	$\frac{1}{2}$	6	2	9						
Input	Output												
$\frac{1}{2}$	6												
2	9												
Find $p(4)$ even though an output repeats. <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <th style="text-align: left;">Input</th> <th style="text-align: left;">Output</th> </tr> <tr> <td>1</td> <td>5</td> </tr> <tr> <td>4</td> <td>5</td> </tr> <tr> <td>7</td> <td>2</td> </tr> </table> Bank label: _____	Input	Output	1	5	4	5	7	2	Use the rule $h(x) = \frac{x^2}{2}$. Its domain is all real numbers. Evaluate $h(3) - 2h(1)$. Compute the exact combination of rule outputs. Bank label: _____				
Input	Output												
1	5												
4	5												
7	2												
Use the rule $W(x) = x + 2$. Its domain is all real numbers. Compute $W(2 - 7)$. Bank label: _____	Ignore the record number and evaluate $N(3)$. <table border="1" style="width: 100%; border-collapse: collapse; margin-bottom: 10px;"> <tr> <th style="text-align: left;">record</th> <th style="text-align: left;">input</th> <th style="text-align: left;">output</th> </tr> <tr> <td>101</td> <td>-2</td> <td>4</td> </tr> <tr> <td>205</td> <td>3</td> <td>8</td> </tr> <tr> <td>310</td> <td>7</td> <td>1</td> </tr> </table> Bank label: _____	record	input	output	101	-2	4	205	3	8	310	7	1
record	input	output											
101	-2	4											
205	3	8											
310	7	1											

Algebra 1

Evaluating Functions
from Representations

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

Use the rule $W(x) = x - 2$. Its domain is all real numbers. Evaluate $\frac{W(5)}{W(1)+W(3)}$. Evaluate the denominator combination before dividing. 	Use the rule $g(x) = (x + 1)^2 - 4$. Its domain is all real numbers. Evaluate $\frac{g(-3)+g(1)}{g(0)-g(-1)}$. Evaluate all four represented outputs before simplifying the ratio. 										
$V(t)$ is volume in liters t hours after opening. The allowed domain is $0 \leq t < 2$. The requested input is 120 minutes. Convert the time and use endpoint inclusion to determine the volume value. 	Consolidate the duplicate record and state $K(5)$. <table border="1" data-bbox="824 957 1469 1119"> <thead> <tr> <th>Input</th> <th>Output</th> </tr> </thead> <tbody> <tr> <td>5</td> <td>8</td> </tr> <tr> <td>1</td> <td>3</td> </tr> <tr> <td>5</td> <td>8</td> </tr> <tr> <td>-2</td> <td>4</td> </tr> </tbody> </table> 	Input	Output	5	8	1	3	5	8	-2	4
Input	Output										
5	8										
1	3										
5	8										
-2	4										
Use the rule $o(x) = \frac{1}{x+1}$. Its domain is all real x except -1. Evaluate $o(-\frac{3}{3})$. Compute the quotient argument and check the excluded input. 	The declared domain is whole numbers. Is more table information needed to determine $r(1.5)$? 										

Algebra 1

Evaluating Functions
from Representations

Name: _____ Date: _____ Class: _____

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: $P(-3) = 97$ kilopascals three days before inspection. $z(t)$ is vertical position in meters above a platform t seconds after launch. Use $z(t) = 6t - 20$. The allowed domain is $0 \leq t \leq 5$. The requested input is 2 seconds. Evaluate and interpret a negative position output. Your response: _____	Incoming: $z(2) = -8$ meters, meaning 8 meters below the platform. $L(t)$ is sea-level change in centimeters relative to a fixed reference level, t hours after 6a.m. Use $L(t) = 0.5t - 5$. The allowed domain is $0 \leq t \leq 12$. The requested input is 2p.m. Resolve the clock reference, evaluate, and interpret the level reference. Your response: _____
Incoming: $E(1.5) = 2.9$ kilowatt-hours after 90 minutes. $P(d)$ is pressure in kilopascals d days relative to an inspection. Use $P(d) = 100 + d$. The allowed domain is $-5 \leq d \leq 5$. The requested input is 3 days before inspection. Translate the relative date to an input and evaluate pressure. Your response: _____	Incoming: $h(2) = -5$. $D(t)$ is distance in miles after t hours. Use $D(t) = 55t$. The allowed domain is $t \geq 0$. Use the model to find the traveled distance after 2.5 hours. Your response: _____
Incoming: $A(2.5) = 6.25$ square meters. $P(n)$ is price in dollars for n tickets. Use $P(n) = 7n$. The allowed domain is whole numbers $n \geq 0$. The requested input is 5 tickets. Evaluate the ticket price for five tickets. Your response: _____	Incoming: $Y(32) = 4640$ yen. Use the rule $m(x) = 0.5(3x - 2)^2$. Its domain is all real numbers. Evaluate $m(2)$ with the inner linear value first. Your response: _____

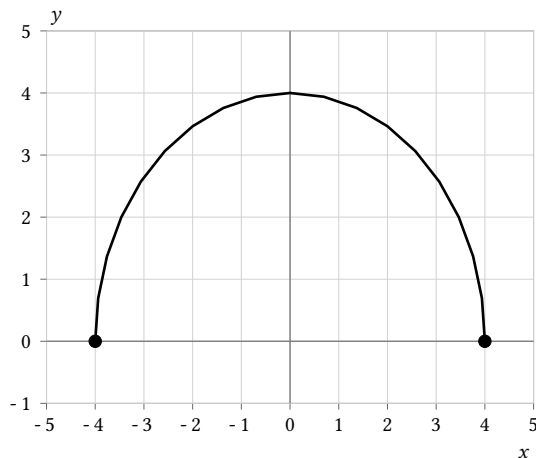
Algebra 1

Evaluating Functions from Representations

Name: _____ Date: _____ Class: _____

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.

Choose an efficient method, explain why it fits the given representation, and then complete the task exactly. Read $Q(0)$ from the specified upper half-circle.



Complete the task, then compare the direct table approach with an equivalent check. Explain why both support the same conclusion. Columns are displayed output first. Find $G(4)$.

output	input
8	1
3	4
-2	6

Evaluating Functions from Representations

Full Worked Solutions - excerpt

Worked example

Problem. Use the rule $B(x) = |2x - 3| + 1$. Its domain is all real numbers. Evaluate $B(-1)$ in the correct operation order.

Answer. $B(-1) = 6$.

Explanation and check.

$$2(-1) - 3 = -5$$

so

$$|-5| + 1 = 6$$

Worked example

Problem. Interpret exact numerical equality to find $L(0.5)$.

Input	Output
$\frac{1}{2}$	6
2	9

Answer. $L(0.5) = 6$.

Explanation and check.

Decimal 0.5 equals the listed input $\frac{1}{2}$.

Algebra 1
Finding Inputs from Function Outputs

Inverse Functions and Reverse Lookup | A1-U04-P05

96 problems · Four activity formats

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Topic focus
Across 96 tasks this topic asks for all admissible inputs with justification.
8 PDFs and a README; 80 buyer pages.

Algebra 1

Finding Inputs from Function Outputs

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. A value without its unit is not a complete answer.

Retain only positive inputs. The supplied candidate inputs are $(0, 5)$. The declared domain is $x > 0$. The target output is 1.	Simplify candidates, then impose number type and endpoints. The supplied candidate inputs are $-\sqrt{4}, \frac{1}{3}, \sqrt{2}, 3$. The declared domain is rational x with $-2 < x \leq 3$. The target output is 9.
Which candidates can represent the item-count input? The supplied candidate inputs are $-2, 0, 6$. The declared domain is whole-number item counts. The target output is \$30.	Filter the candidates through the closed interval. The supplied candidate inputs are $(-3, 4)$. The declared domain is $0 \leq x \leq 6$. The target output is 5.
Which candidate times fall within operating hours? The supplied candidate inputs are $8, 14, 19$. The declared domain is hours 9 through 17 inclusive. The target output is target occupancy.	Apply all three domain conditions to the candidate set. The supplied candidate inputs are $-6, -2, 3, 8$. The declared domain is integers x with $-3 \leq x < 8$ and $x \neq 3$. The target output is 4.

Algebra 1

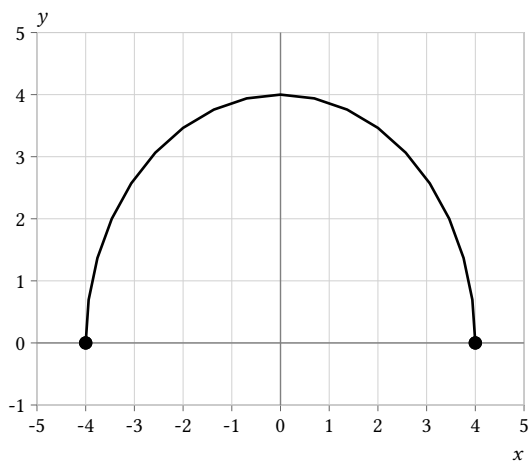
Finding Inputs from
Function Outputs

Name: _____ Date: _____ Class: _____

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: Every x in $[-1, 4]$.

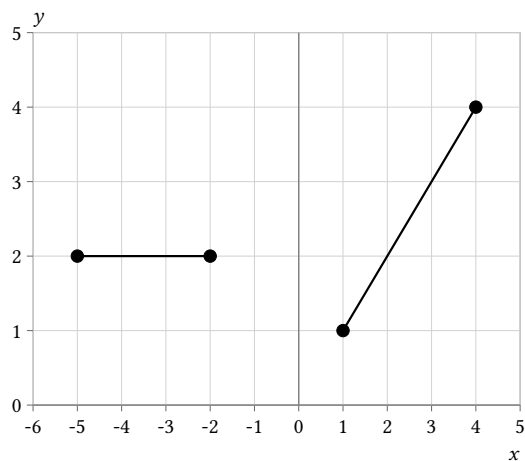
Recover the inputs at the semicircle's zero level.



Your response: _____

Incoming: $x = -4$ and $x = 4$.

Find all inputs at height 2 across both pieces.



Your response: _____

Algebra 1

Finding Inputs from
Function Outputs

Name: _____ Date: _____ Class: _____

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.

Does the output bound make the observed reverse lookup complete?

rows: (1, 7), (4, 2), (8, 7); table scope: partial; additional fact: all outputs are between 0 and 10; target output: 7

Input	Output
1	7
4	2
8	7

Diagnose the direction error and recover the input.

The rule is $f(x) = 2x + 1$. The target output is 9. The supplied student work is: $f(9) = 19$, so the answer is 19.

Finding Inputs from Function Outputs

Full Worked Solutions - excerpt

Worked example

Problem. Is the extra range fact sufficient for a complete reverse lookup?

rows: $(0, 8), (2, 3), (5, 8)$; table scope: partial; additional fact: every unlisted input has output below 0; target output: 8

Input	Output
0	8
2	3
5	8

Answer. Yes. The full set is $\{0, 5\}$.

Explanation and check.

Both listed matches count, and negative unlisted outputs cannot equal 8.

Worked example

Problem. Select all candidates allowed by the even-integer domain.

The supplied candidate inputs are -4, 1, 6. The declared domain is even integers. The target output is 12.

Answer. $\{-4, 6\}$.

Explanation and check.

Both -4 and 6 are even; 1 is not.

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: _____

Algebra 1

Domain and Range

Name: _____ Date: _____ Class: _____

Answer each question and show your reasoning in the workspace. Give exact values rather than decimals unless the question supplies a decimal. Give the whole requested response, including any reasoning the question asks for.

Determine the natural domain of h. rule: $h(x) = x + 4$ _____ _____	Does the formula make the cropped graph sufficient? exact rule: $f(x) = 2x + 1$ for every real x; visible window: $-2 \leq x \leq 2$ _____ _____
Separate the known full range from input evidence. known: range is exactly $[0, 10]$; two observed inputs are -1 and 4; domain: not supplied _____ _____	Which complete set can be stated? known: domain is all integers; outputs observed are 2 and 5; rule: not supplied _____ _____
Solve the radicand condition. rule: $u(x) = \sqrt{x - 2}$ _____ _____	Which projection is complete under the onto statement? known: f is onto all real outputs; observed inputs: $(0, 2)$; domain: otherwise unstated _____ _____

Algebra 1

Domain and Range

Name: _____ Date: _____ Class: _____

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: _____

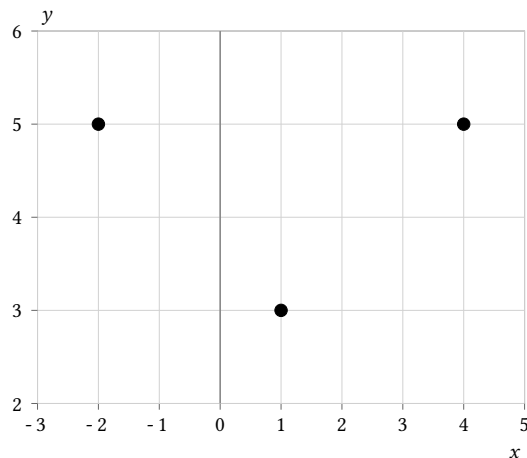
Algebra 1

Domain and Range

Name: _____ Date: _____ Class: _____

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 $\{1, 2, 3\}$

Domain and Range

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.