

Algebra 1

Domain in Context

Domain in Context | A1-U04-P07

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 justified feasible input set and domain type.

8 PDFs and a README; 47 buyer pages.

Algebra 1

Domain in Context

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.

For a runner, t is the exact elapsed time in seconds after the starting signal. Classify the domain of t and give two admissible values. _____ Bank label: _____	A cyclist's route coordinate is d kilometers from the start. The modeled segment begins at 3 km and ends just before a rest stop at 27 km. State the domain. _____ Bank label: _____
Let m be the number of text messages received during an afternoon. Identify the natural domain kind. _____ Bank label: _____	Water volume in a rectangular aquarium is $V(h) = 1800h$ cubic centimeters. The interior height is 32 cm. Restrict water depth h. _____ Bank label: _____
A banquet hall records g, the number of guests who enter. Is the natural domain of g discrete or continuous? Give two possible inputs. _____ Bank label: _____	The hours per worker are $h(n) = \frac{96}{n}$ when n workers share a job. At most 24 whole workers can be assigned. Find n's domain. _____ Bank label: _____
A dispatcher uses b for the number of buses currently at a school. Decide whether b is discrete or continuous and illustrate. _____ Bank label: _____	A yard uses n whole 2.5-m fence panels. At least 15m and at most 32m of fence are wanted. Find all feasible n. _____ Bank label: _____

Algebra 1

Domain in Context

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: Garden width has domain $4 \leq w \leq 22$ meters. A test is valid for $-10 < C \leq 35$ degrees Celsius. Using $F = 1.8C + 32$ as the new input scale, find the Fahrenheit domain. Your response: _____	Incoming: Fahrenheit input has domain $14 < F \leq 95$. Fence length remaining is $L(n) = 244 - 8n$ feet after n equal panels are placed. At least 20 feet must remain for a gate area. Restrict whole panel count n. Your response: _____
Incoming: Midnight-based input has domain $9 \leq k < 17$. A rectangle has perimeter $52m$, so its length is $26-w$ when width is w. Both side lengths must be at least $4m$. Restrict w. Your response: _____	Incoming: Brace input has domain $5 < x < 14$. A square tile area A may be any real value with $9 < A \leq 81$ square centimeters. The input is changed to side length $s = \sqrt{A}$. Find s's domain. Your response: _____
Incoming: Grain-sack input has domain n in $\{0, 1, \dots, 32\}$. A package contains 4 tickets and costs \$54. A buyer needs at least 18 tickets and has at most \$310. If p is the package count, find p's domain. Your response: _____	Incoming: Pool-filling time has domain $0 \leq t \leq 9$ hours. A triangle model uses base b and height $12-b$, with $A(b) = b(12-b)/2$. Both lengths must be positive. Restrict b. Your response: _____

Algebra 1

Domain in Context

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.

A room-capacity model uses c , the number of chairs set out, but proposes domain $-5 \leq c \leq 40$. Diagnose and repair it.

A graph of $N(t)$, completed repairs by time t , uses slanted segments between completion times 1.5, 4, and 6.2 hours. Repairs count only when finished. Diagnose and replace the graph behavior.

A vending controller accepts prices entered to the cent from \$0.50 to \$5.00, but its proposed domain is the full interval $[0.50, 5.00]$. Repair it.

A weather model covers 6:00a.m. through noon, but a graph restricts time to $\{6, 8, 10, 12\}$ because those were measurement hours. Audit the graph.

Domain in Context

Full Worked Solutions - excerpt

Worked example

Problem. For a runner, t is the exact elapsed time in seconds after the starting signal. Classify the domain of t and give two admissible values.

Answer. Runner time t has a continuous domain; 0 and 4.73 seconds are admissible values.

Explanation and check.

Exact elapsed time can take intermediate real values, not only the displayed whole seconds.

Worked example

Problem. A cyclist's route coordinate is d kilometers from the start. The modeled segment begins at 3 km and ends just before a rest stop at 27 km. State the domain.

Answer. Modeled route position has domain $3 \leq d < 27$ kilometers.

Explanation and check.

The segment includes its 3- km reference point but excludes the rest-stop position.