Algebra 1 SOL Released Questions:

Functions

A function f is described.

- $f(x) = (x-2)^2 + 3$
- The domain of f is all real numbers greater than 0.

The range of f is all real numbers greater than or equal to —
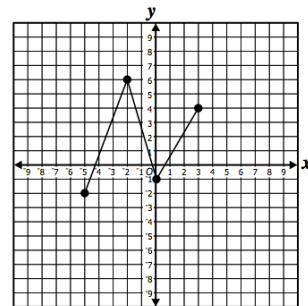
○ **A** 2

○ **B** 3

○ **C** 5

○ **D** 7

PIG 2009

What is the domain of the relation shown in the table?

x	y
−5	−23
−2	−14
0	−8
3	1
6	10

A $\{-5,\ -2,\ 0,\ 3,\ 6\}$

B $\{-23,\ -14,\ -8,\ 1,\ 10\}$

C $\{-23,\ -14,\ -8,\ -5,\ -2,\ 0,\ 1,\ 3,\ 6,\ 10\}$

D $\{(-5,-23),(-2,-14),(0,-8),(3,1),(6,10)\}$

2010

What is the domain of the function shown?

A $-2 \le x \le 6$

B $-5 \le x \le 3$

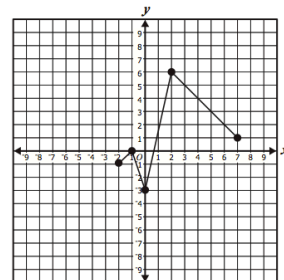**C** $-2 \le y \le 6$

D $-5 \le y \le 3$

2010

What are the range values of the function $f(x) = -3x^2 + 5$ for the domain values $\{-2, 0, 1\}$?

A $\{-31, -4, 5\}$

B $\{-7, 2, 5\}$

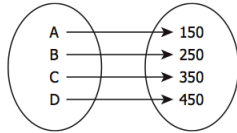**C** $\{5, 8, 17\}$

D $\{5, 14, 41\}$

2010

What is the range of the function shown?

A $-2 \le x \le 7$

B $-3 \le x \le 6$

C $-2 \le y \le 7$

D $-3 \le y \le 6$

2009

Which of the following represents the domain of the relation shown?


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A ──────► 150
B ──────► 250
C ──────► 350
D ──────► 450
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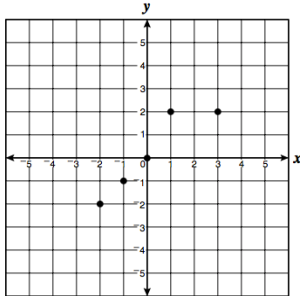
F {A, B, C, D}
G {A, B, 150, 250}
H {150, 250, 350, 450}
J {A, 150, B, 250, C, 350, D, 450}

2009

The elements of a function of x are $(-4, 1), (-2, 0),$ and $(8, -1)$. What is the range of the function?

F $\{-1, 1\}$

G $\{-1, 0, 1\}$

H $\{-4, -2, 8\}$

J $\{-4, -2, -1, 0, 1, 8\}$

2007

What is the range of the relation plotted on the graph?

A {-2, -1, 0, 1, 2}
B {-2, -1, 0, 2}
C {-2, -1, 1, 2}
D {-2, -1, 0, 1, 2, 3}

2006

What is the range of the function

$$f(x) = \frac{1}{2}x - 2 \text{ when the domain is}$$

{2, 4, 6}?

A {8, 12, 16}

B {0, 1, 2}

C {-1, 0, 1}

D $\left\{-1, 0, \frac{1}{2}\right\}$

2006

The function below contains ordered pairs of the form (x, y).

$$f = \{(6, 5), (2, 3), (1, 4)\}$$

What is the range of the function?

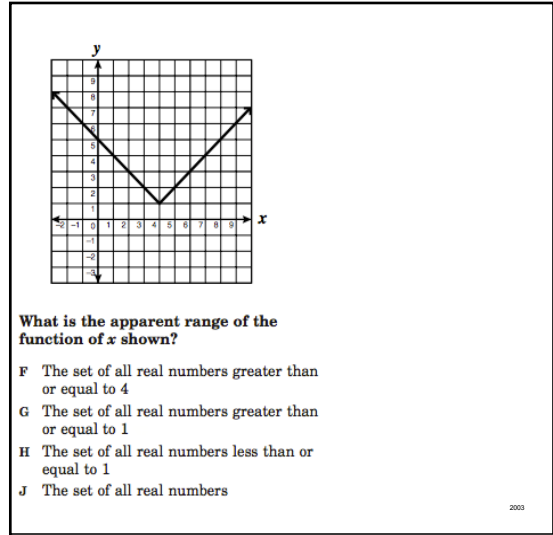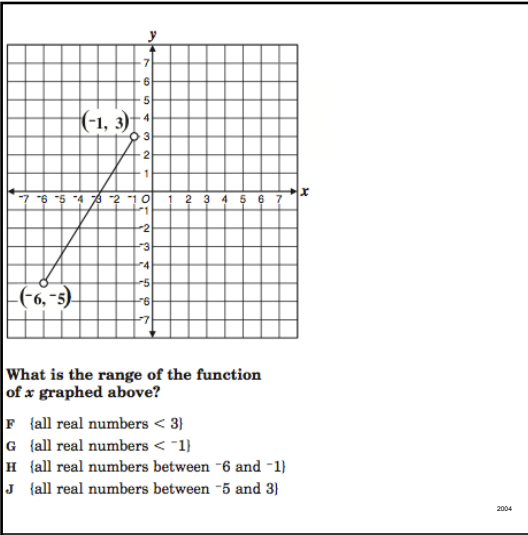F {4}
G {1, 2, 3, 4, 5, 6}
H {1, 2, 6}
J {3, 4, 5}

2005

What is the range of the function

$$f(x) = (x - 1)^2$$

when the domain is {-5, 0, 5}?

A {1, 16, 36}
B {1, 24}
C {1, 26}
D {-12, -2, 8}

2004

What is the range of the function of x graphed above?

F {all real numbers < 3}
G {all real numbers < ⁻1}
H {all real numbers between ⁻6 and ⁻1}
J {all real numbers between ⁻5 and 3}

2004

What is the apparent range of the function of x shown?

F The set of all real numbers greater than or equal to 4
G The set of all real numbers greater than or equal to 1
H The set of all real numbers less than or equal to 1
J The set of all real numbers

2003

What is the range of the function $f(x) = 3x - 1$ when the domain is {⁻1, 0, 1}?

F {⁻1, 2}
G {⁻1, 0, 1}
H {1, 2, 4}
J {⁻4, ⁻1, 2}

2003

What is the domain of the function shown?

F {All real numbers greater than zero}
G {All real numbers}
H {All real numbers less than ⁻2}
J {All real numbers greater than ⁻2}

2002

What is the apparent range of the relation shown on the grid?

A {⁻2, 1, 3}
B {⁻2, 1, 2, 4}
C {1, 2, 3, 4}
D {⁻2, 2, 3, 4}

2002
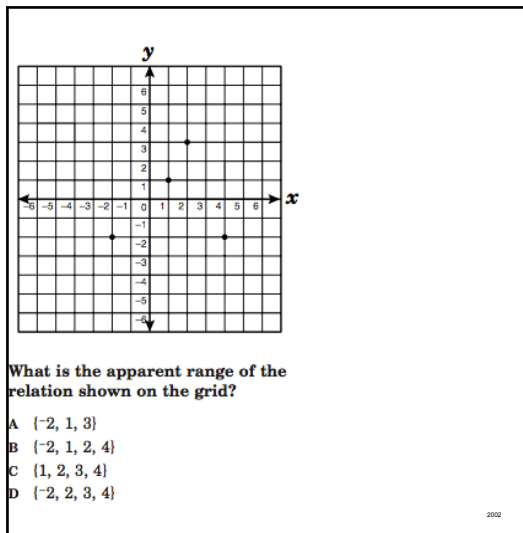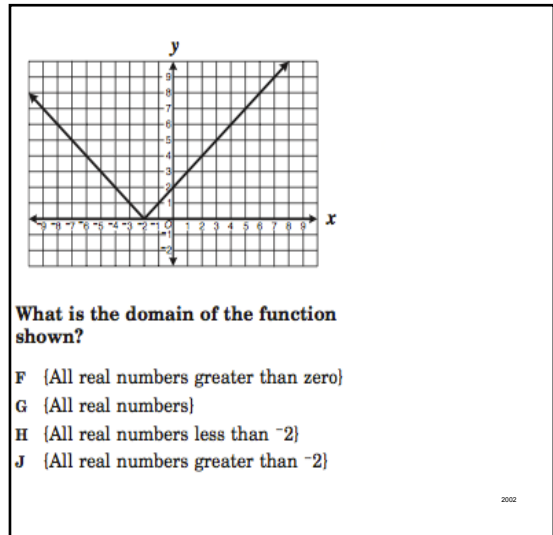
A lumber yard sells square scraps of plywood with sides varying from 1 foot to 4 feet. Ed wants to use some of these pieces to build storage cubes. The relationship between the length of the side of a cube and the volume of the cube is expressed by the function

$f(x) = x^3$

where x is the length of a side of the cube. What is the range of this function in cubic feet for the domain given?
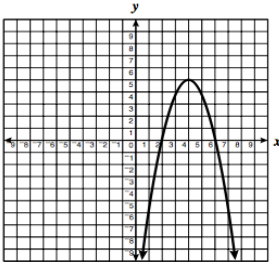
F Range varies from 1 to 64
G Range varies from 1 to 16
H {1, 64}
J {1, 16}

2002

The graph shows part of a function *f*.

What is the range of the function?

A All real numbers
B All real numbers less than or equal to five
C All real numbers greater than zero
D All real numbers between 2 and 6

2001

What is the range of the function
$$f(x) = \frac{1}{2}x + 5 \text{ when the domain is}$$
{2, 4, 6}?

F {⁻6, ⁻2, 2}
G {6, 7, 8}
H {2, 4, 6}
J {1, 3, 5}

2001

What is the domain of the set of ordered pairs
{(⁻5, ⁻4), (⁻4, 4), (2, 3), (4, 5)}?

A {⁻5, ⁻4, 2, 4}
B {⁻4, 3, 4, 5}
C {⁻5, ⁻4, 4, 5}
D {⁻5, 2, 3, 4}

2000
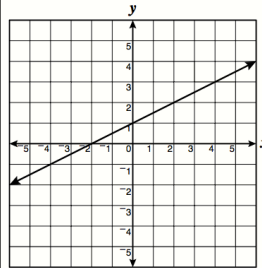
What is the domain of the function shown above?

F All integers
G All real numbers
H All natural numbers
J All whole numbers

2000

What is the range of the function
f(x) = 5 − 8x when the domain is
{⁻2, 2, 4}?

F {⁻27, ⁻11}

G {⁻27, ⁻11, 21}

H {⁻2, 2, 4}

J $\left\{ \dfrac{1}{8}, \dfrac{3}{8}, \dfrac{7}{8} \right\}$

2000