

3

Input: An ordered pair of real numbers

Output: A real number

6

Input: An ordered triple of real numbers

Output: A parabola or a line

9

Input: A polygon

Output: A real number

2

Input: A real number

Output: An ordered pair of real numbers

5

Input: An ordered pair of real numbers

Output: A line

8

Input: A function

Output: A set of real numbers

1

Input: A real number

Output: A real number

4

Input: An ordered pair of real numbers

Output: An ordered pair of real numbers

7

Input: A finite set of real numbers

Output: A real number

12

Input: A set of points in the plane

Output: A set of points in the plane

15

Input: A polygon in the plane and a linear function of two variables

Output: A number

18

Input: A positive integer

Output: A real number integer

11

Input: A finite set of points in the plane

Output: A line

14

Input: An ordered pair of real numbers

Output: An isometry

17

Input: A sequence of real numbers

Output: A real number

10

Input: A polynomial

Output: A polynomial

13

Input: A finite set

Output: An integer

16

Input: A line and a set of points in the plane

Output: A set of points in the plane

Types of Functions

21

Input: A polyhedron

Output: A real number

Types of Functions

24

Input:

Output:

Types of Functions

27

Input:

Output:

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

Types of Functions

20

Input: A polyhedron

Output: An ordered triple of positive integers

Types of Functions

23

Input:

Output:

Types of Functions

26

Input:

Output:

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

Types of Functions

19

Input: A positive integer

Output: A set of positive integers

Types of Functions

22

Input:

Output:

Types of Functions

25

Input:

Output:

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 / 60

Examples of Functions

3

Input: (x, y)

Output: $(x + \frac{4}{3}, y - 8)$

Examples of Functions

6

Input: (a, b, c)

Output: $y = ax^2 + bx + c$

Examples of Functions

9

Input: $\{a_1, \dots, a_n\}$

Output: The median of a_1, \dots, a_n

Examples of Functions

2

Input: t

Output: $(3 \cos t, 3 \sin t)$

Examples of Functions

5

Input: (x, y)

Output: $x^2 - y^2$

Examples of Functions

8

Input: x

Output: $2x^2 - \frac{3}{5}x + 5$

Examples of Functions

1

Input: x

Output: $9x - 3$

Examples of Functions

4

Input: (x, y)

Output: $(3x - 2y, 5x + 9y)$

Examples of Functions

7

Input: (x, y)

Output: (y, x)

12

Input: A polygon

Output: Its perimeter

15

Input: (x, y)

Output: $(5x, 5y)$

18

Input: A finite set

Output: The number of elements in the set

11

Input: $y = f(x)$

Output: The maximum value of $f(x)$

14

Input: A set of points in the plane

Output: A line of best fit

17

Input: A set of points in the plane

Output: The rotation of this set by 90 degrees about the origin

10

Input: $y = f(x)$

Output: The set of x for which $f(x) = 0$

13

Input: A polynomial

Output: Its derivative

16

Input: (x, y)

Output: $(-y, x)$

21

Input: $\{a_1, \dots, a_n\}$ **Output:** The mode of a_1, \dots, a_n

24

Input: A polygon**Output:** Its area

27

Input: A line and a set of points in the plane**Output:** The reflection of the the set in the line

20

Input: A polynomial**Output:** Its antiderivative (with constant term 0)

23

Input: (m, b) **Output:** The reflection isometry over the line $y = mx + b$

26

Input: A polygon and a linear function $ax + by$ **Output:** The maximum value of the function in the polygon

19

Input: t **Output:** $(4t - \frac{1}{2}, -2t + 3)$

22

Input: A polyhedron**Output:** Its volume

25

Input: (a, b) **Output:** The translation isometry $(x, y) \rightarrow (x + a, y + b)$

30

Input: A positive integer**Output:** The set of its factors

33

Input: A set of points in the plane**Output:** The reflection of this set in the y -axis

36

Input: A polyhedron**Output:** Its surface area

29

Input: (m, b) **Output:** $y = mx + b$

32

Input: A polyhedron**Output:** (V, E, F)

35

Input: A positive integer**Output:** The number of its factors

28

Input: A sequence of real numbers**Output:** The limit of this sequence if it exists

31

Input: $\{a_1, \dots, a_n\}$ **Output:** $\frac{a_1 + \dots + a_n}{n}$

34

Input: A finite set**Output:** The number of subsets

39

Input: x

Output: $\sin x$

0

38

Input: θ

Output: The point $(r = \cos \theta, \theta)$
in polar coordinates

0

37

Input: A positive integer n

Output: The sum $1 + \dots + n$

0