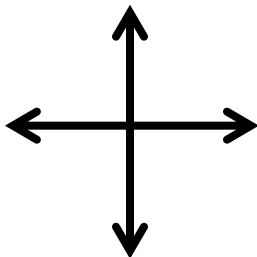


discrete functions

A discrete function has a
graph that consists of

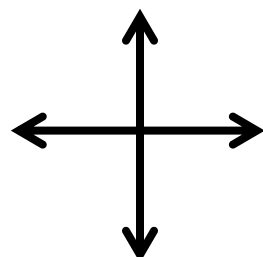
_____.



continuous functions

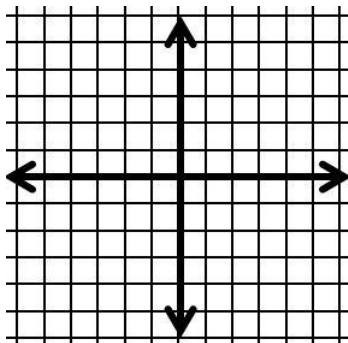
A continuous function has
a graph that is

_____.

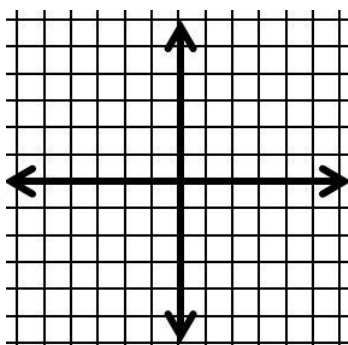


GRAPHING discrete functions

Graph the function $y = 2x - 1$ with domain $x = \{-1, 0, 1, 2, 3\}$. Then, identify the range.



Graph the function $y = -x + 4$ with domain $x = \{-2, -1, 0, 1, 2\}$. Then, identify the range.



identifying discrete situations

Explain why the situation is discrete.

Cost of movie tickets

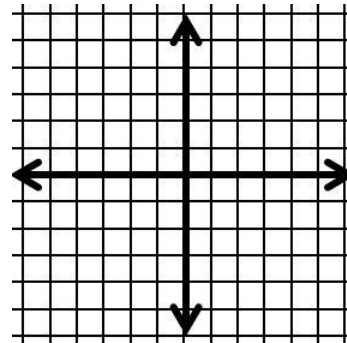
# of Movie Tickets	1	2	3	4	5
Cost (dollars)	8.50	17.00	25.50	34.00	42.50

Points during game of laser tag

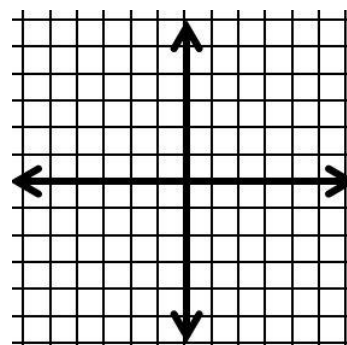
Targets Hit	0	1	2	3	4	5	6
Score	0	4	8	12	16	20	24

GRAPHING continuous functions

Graph the function $y = 2x - 1$ with domain $x \geq 0$. Then, identify the range.



Graph the function $y = -x + 4$ with domain $x \geq 1$. Then, identify the range.



identifying continuous situations

Explain why the situation is continuous.

Temperature of fish tank during an experiment

Time (h)	0	1	2	3	4
Temperature ($^{\circ}\text{F}$)	83	80	79	77	74

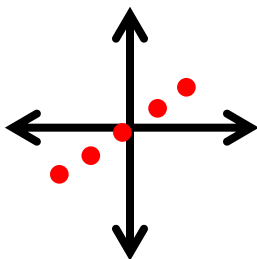
Height of rocket after launch

Time (s)	0	1	2	3	4	5	6
Height (m)	0	30	35	37	31	22	0

discrete functions

A discrete function has a graph that consists of

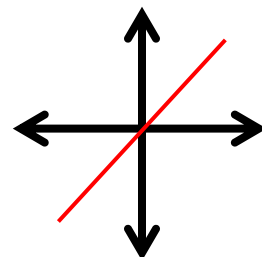
distinct points



continuous functions

A continuous function has a graph that is

connected

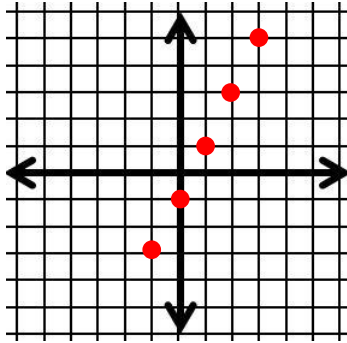


GRAPHING discrete functions

Graph the function $y = 2x - 1$ with domain $x = \{-1, 0, 1, 2, 3\}$. Then, identify the range.

x	y
-1	$2(-1) - 1 = -3$
0	$2(0) - 1 = -1$
1	$2(1) - 1 = 1$
2	$2(2) - 1 = 3$
3	$2(3) - 1 = 5$

Range:
 $y = \{-3, -1, 1, 3, 5\}$

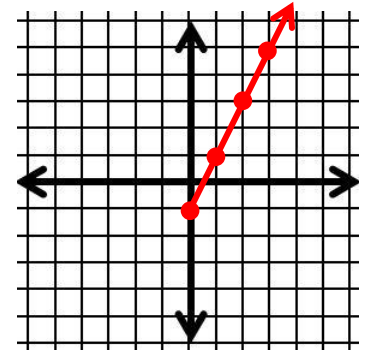


GRAPHING continuous functions

Graph the function $y = 2x - 1$ with domain $x \geq 0$. Then, identify the range.

x	y
0	$2(0) - 1 = -1$
1	$2(1) - 1 = 1$
2	$2(2) - 1 = 3$
3	$2(3) - 1 = 5$
4	$2(4) - 1 = 7$

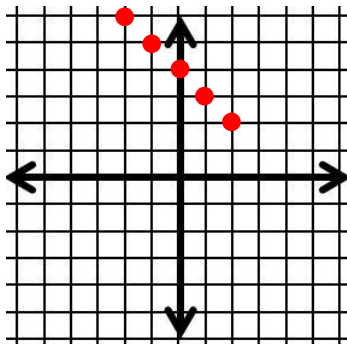
Range:
 $y \geq -1$



Graph the function $y = -x + 4$ with domain $x = \{-2, -1, 0, 1, 2\}$. Then, identify the range.

x	y
-2	$-(-2) + 4 = 6$
-1	$-(-1) + 4 = 5$
0	$-(0) + 4 = 4$
1	$-(1) + 4 = 3$
2	$-(2) + 4 = 2$

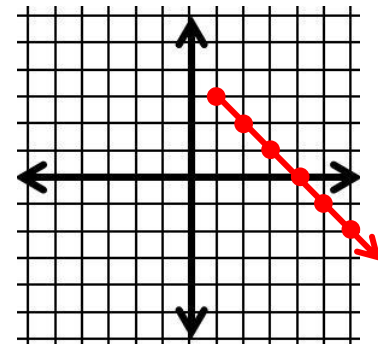
Range:
 $y = \{2, 3, 4, 5, 6\}$



Graph the function $y = -x + 4$ with domain $x \geq 1$. Then, identify the range.

x	y
1	$-(1) + 4 = 3$
2	$-(2) + 4 = 2$
3	$-(3) + 4 = 1$
4	$-(4) + 4 = 0$
5	$-(5) + 4 = -1$

Range:
 $y \leq 3$



identifying discrete situations

Explain why the situation is discrete.

Cost of movie tickets

# of Movie Tickets	1	2	3	4	5
Cost (dollars)	8.50	17.00	25.50	34.00	42.50

You cannot purchase a part of a movie ticket.
You must purchase tickets in whole number increments.

Points during game of laser tag

Targets Hit	0	1	2	3	4	5	6
Score	0	4	8	12	16	20	24

You either hit the target or you don't. It is impossible to hit $\frac{1}{2}$ of a target, for example.

identifying continuous situations

Explain why the situation is continuous.

Temperature of fish tank during an experiment

Time (h)	0	1	2	3	4
Temperature ($^{\circ}\text{F}$)	83	80	79	77	74

Time is continuous. Although the table only displays the temperature after 1 hour increments, there was a corresponding temperature at any given time between the hours shown (ie: after $\frac{1}{2}$ hour).

Height of rocket after launch

Time (s)	0	1	2	3	4	5	6
Height (m)	0	30	35	37	31	22	0

Time is continuous. Although the table only displays the height after 1 second increments, there was a corresponding height at any given time (ie: after $1\frac{1}{2}$ seconds).

Directions

Step 1: Photocopy pages 1 & 2 front to back (flip along the short edge)

Step 2: Fold in half and cut between the two rectangles making two flaps.

The final product should look like this:

