NAME DATE PERIOD

Lesson 5: The Tortoise and the Hare

Ready, Set, Go

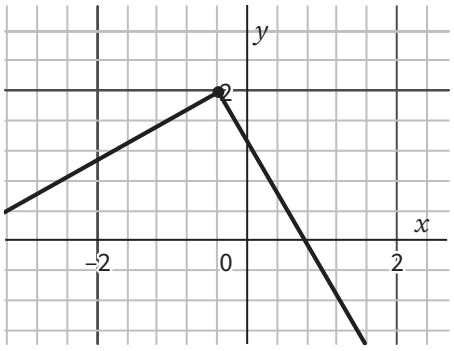
Ready

Identify which of the following representations are functions. If the representation is NOT a function, state how you would fix it to make it a function.

1. $D = (4, -1), (3, -6), (2, -1), (1, 2), (0, 4), (2, 5)$

2. The number of calories you have burned since midnight at any time during the day.

3.

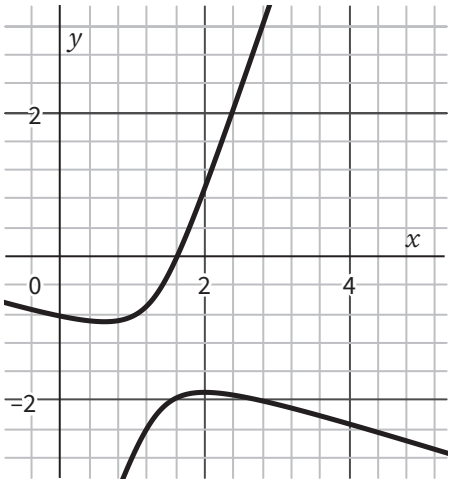


4.

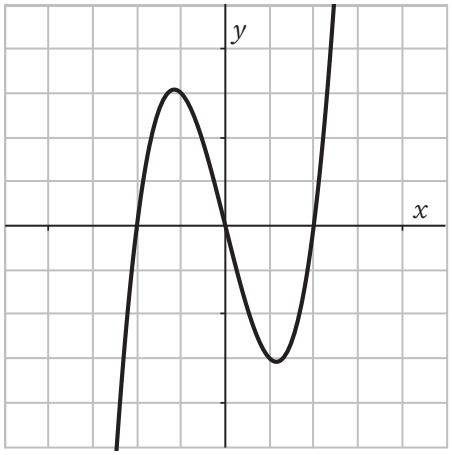
x	-12	-8	-6	-4
$f(x)$	25	25	25	25

NAME DATE PERIOD

5.



6.



Set

The graph in Figure 1 shows time (minutes) on the x-axis and distance (miles) on the y-axis for cars traveling in the same direction along the freeway. The graph for Car A is a straight line. The graph for Car B is a parabola because it is a quadratic function.

NAME DATE PERIOD

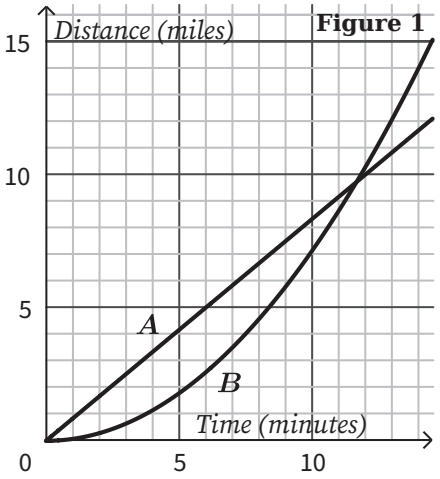


Figure 1

7. Which car has the cruise control on (is maintaining at the same speed)? How do you know?

8. Which car is accelerating? How do you know?

9. Identify the interval in Figure 1 where car A has gone farther than car B.

10. The graph of the speed of a third car, Car C, which has an exponential relationship is now shown in the graph (see Figure 2). All 3 cars have the same destination.

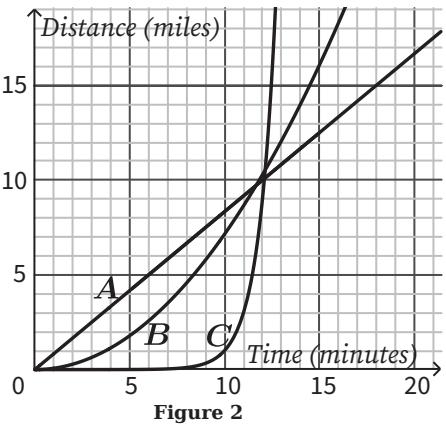


Figure 2

NAME DATE PERIOD

a. If the destination corresponds with a distance of 12 miles from the origin, which car do you predict will arrive first? Justify your answer.

b. If the three cars passed the starting point at the same time, and were racing, would there ever be another time that they would be tied? Explain.

c. Describe the race for these three cars.

11. If the cars are able to proceed beyond a time of 13 minutes, according to the type of function they are being described by, will the lead ever change again? Explain.

12. On a graph that shows distance versus time, what do you look at in order to find speed?

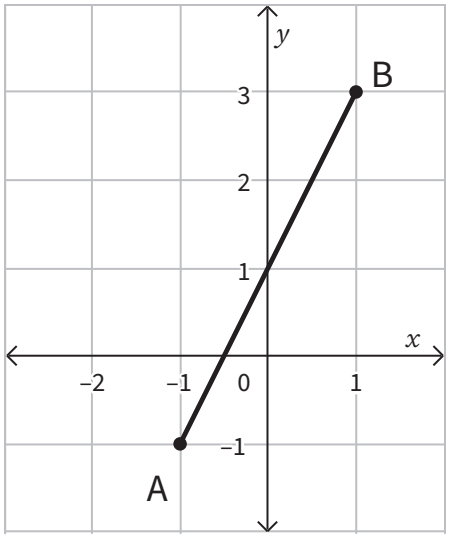
Go

State the domain and range of each graph. Use interval notation where appropriate.

13. Domain:

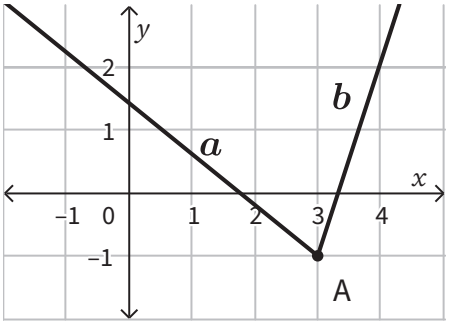
Range:

NAME DATE PERIOD



14. Domain:

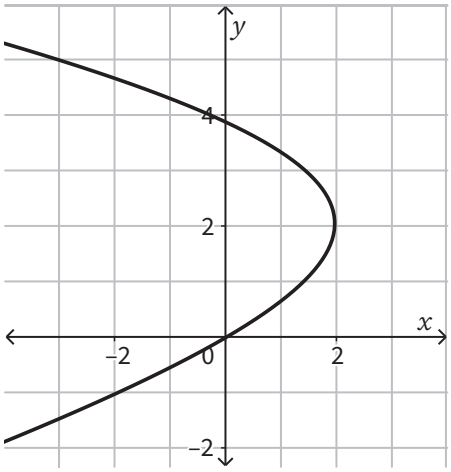
Range:



15. Domain:

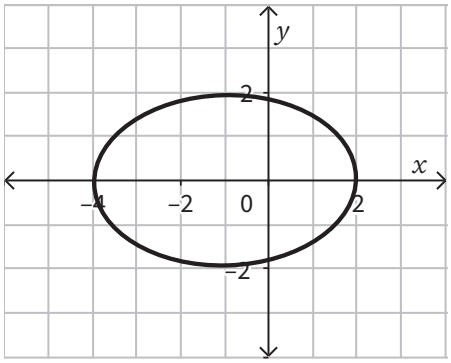
Range:

NAME DATE PERIOD



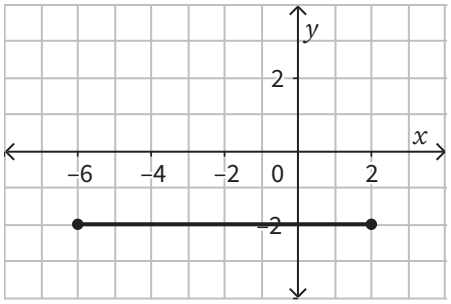
16. Domain:

Range:



17. Domain:

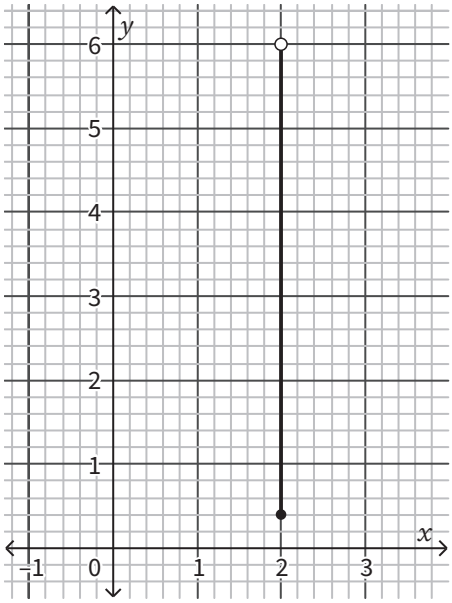
Range:



NAME DATE PERIOD

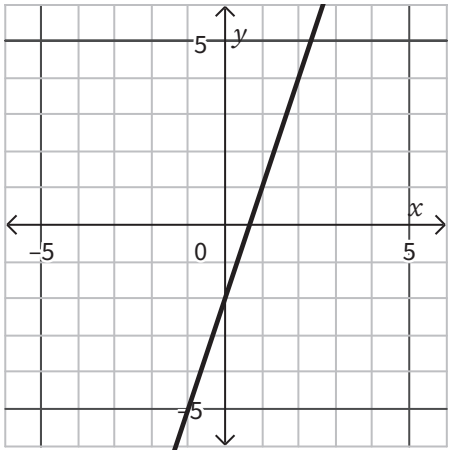
18. Domain:

Range:



19. Domain:

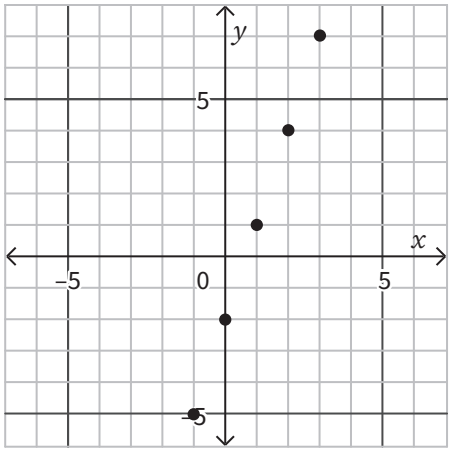
Range:



20. Domain:

Range:

NAME DATE PERIOD



21. Are the domains of #19 and #20 the same? Explain.