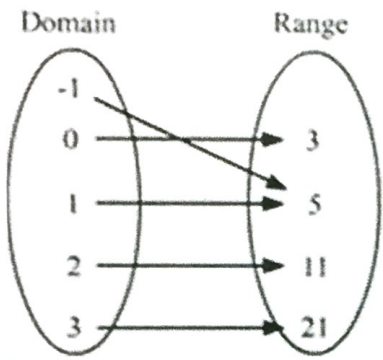


Unit 2 Review - Secondary 1 Honors

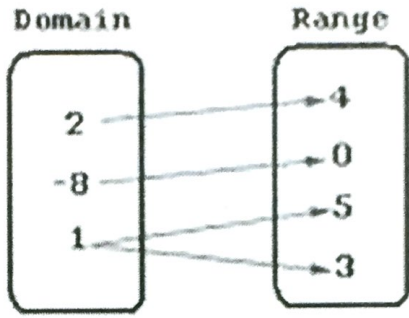
Determine whether the following is a function. Explain why or why not?

1.



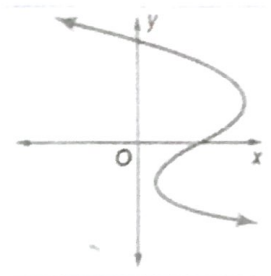
Yes, each input has exactly one output

2.



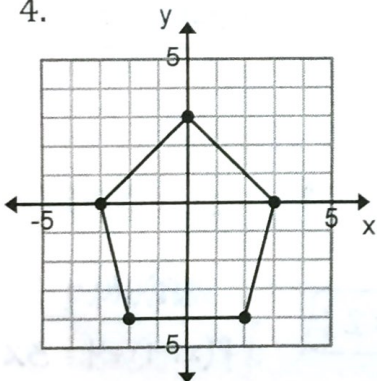
No, the input of 1 has 2 outputs of 5 & 3.

3.



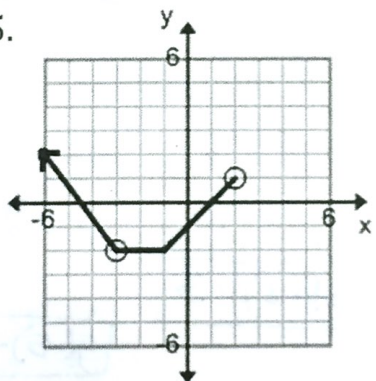
No, doesn't pass the VLT

4.



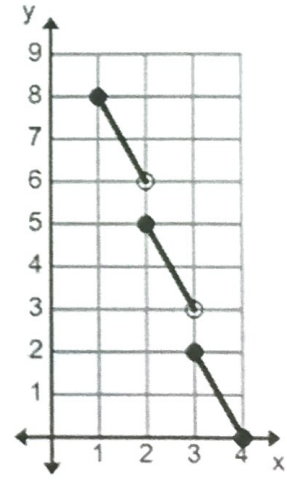
No, doesn't pass the VLT

5.



Yes, passes the VLT

6.



Yes, passes the VLT

Determine if each set of ordered pairs is a function or not, then state the domain and range.

7. $\{(-4,3), (5,3), (-2,1), (-7,1)\}$ Yes

D: $\{-7, -4, -2, 5\}$ R: $\{1, 3\}$

8. $\{(-3,2), (4,5), (-3,7), (4,-9), (5,-3)\}$ No

D: $\{-3, 4, 5\}$ R: $\{-9, -3, 2, 5, 7\}$

Find the average rate of change for the given interval.

9. on the interval $[3, 6]$

6

x	f(x)
0	2
1	-3
2	0
3	2
4	6
5	12
6	20

10. on the interval $[6, 8]$

-4

n	f(n)
6	23
7	19
8	15
9	11

Determine whether the following is a function. Explain why or why not?

11.

x	f(x)
-3	6
2	9
-4	3
2	9

Yes, each input has only one output

12.

x	f(x)
-5	9
-2	1
4	3
1	1

Yes, each input has only one output

13. $f(x) = 2x - 9$

Yes, lines pass the VLT

Use $f(x) = 3x - 4$, $g(x) = x^2 + 5$, & $h(x) = -5x + 3$ to answer questions 14-23.

14. $f(x) + g(x)$

$$f(x) + g(x) = x^2 + 3x + 1$$

15. $f(-5)$

$$f(-5) = -19$$

16. $g(-5)$

$$g(-5) = 30$$

17. $f(x) \cdot g(x)$

$$f(x) \cdot g(x) = 3x^3 - 4x^2 + 15x - 20$$

18. $f(2) - h(-3)$

$$f(2) - h(-3) = 14$$

19. $f(7) - 3$

$$f(7) - 3 = 14$$

20. $g(4) + 7$

$$g(4) + 7 = 28$$

21. $3 + f(2)$

$$3 + f(2) = 5$$

22. $g(-5) - 3$

$$g(-5) - 3 = 27$$

23. $f(x+9) + 4$

$$f(x+9) + 4 = 3x + 27$$

Use $f(x) = -7x + 6$ & $g(x) = 2x + 4$ to answer questions 24-28.

24. $f(x) = -36$

$$f(6) = -36$$

25. $g(7)$

$$g(7) = 18$$

26. $f(5)$

$$f(5) = -29$$

27. $g(0)$

$$g(0) = 4$$

28. $g(x) = 28$

$$g(12) = 28$$

Use the table to answer questions 29-32.

x	$f(x)$
-1	8
2	0
3	8
-2	-1
0	-2
4	2

29. $f(-2)$

$f(-2) = -1$

30. $f(x) = -2$

$f(0) = -2$

31. $f(x) = 8$

$f(-1) = 8$
 $f(3) = 8$

32. $f(2)$

$f(2) = 0$

Use the graph to the right to answer questions 33-37.

33. $f(2)$

$f(2) = -3$

34. $f(x) = 0$

$f(-1) = 0$
 $f(-3) = 0$

35. $f(-4)$

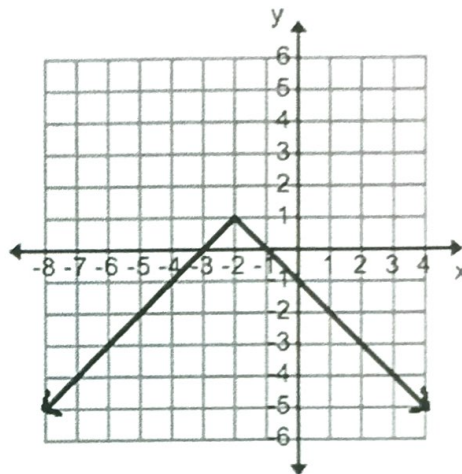
$f(-4) = -1$

36. $f(x) = 1$

$f(-2) = 1$

37. $f(x) = -3$

$f(2) = -3$
 $f(-6) = -3$



38. Describe the features of the graph below using **SET BUILDER** notation

Is this a function? yes Why? passes the VLT

Domain: $x \leq -1, x \geq 1$

Range: $y \geq -4$

Continuity: (Circle one) Continuous

Non-Continuous

Discrete

Increasing: $x > 1$

Decreasing: $x < -1$

Minimum: $f(-1) = -4, f(1) = -4$

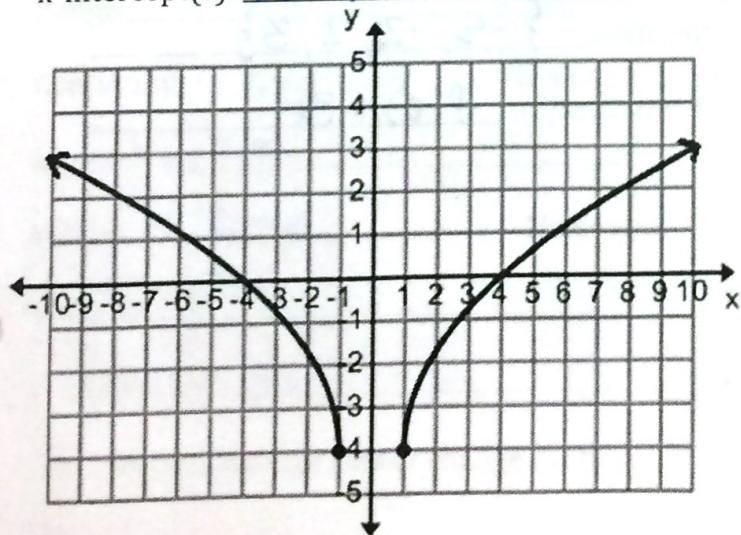
Maximum: None

Positive: $x < -4, x > 4$

Negative: $-4 < x \leq -1, 1 \leq x < 4$

x-intercept(s): $f(-4) = 0, f(4) = 0$

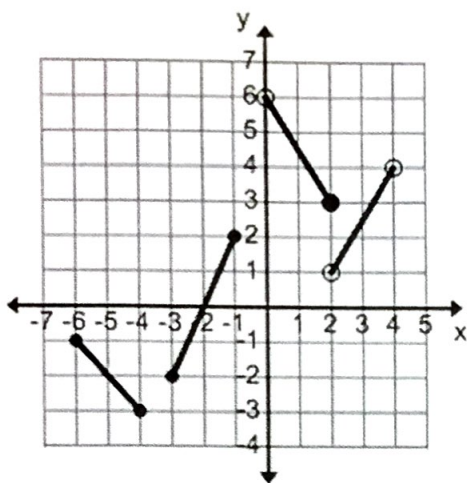
y-intercept(s): None



39. Find the average rate of change for the graph on the left on the interval $[1, 4]$.

$\frac{4}{3}$

40. Describe the features of the graph below using SET BUILDER notation



Is this a function? yes Why? passes the VLT

Domain: $-6 \leq x \leq -4$ $-3 \leq x \leq -1$ $0 < x < 4$

Range: $-3 \leq y < 6$

Continuity: Continuous Non-Continuous Discrete

Increasing: $-3 < x < -1$ $2 < x < 4$

Decreasing: $-6 < x < -4$ $0 < x < 2$

Minimum: $f(-4) = -3$ Maximum: approaches $f(0) = -6$

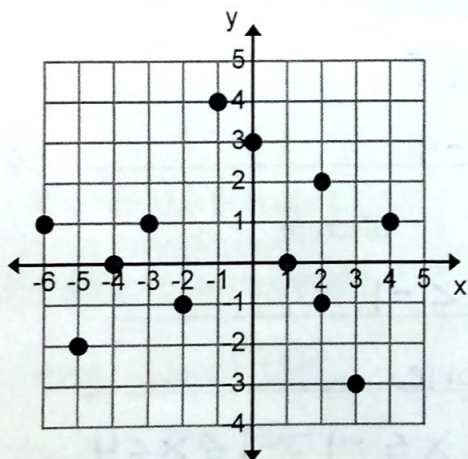
Positive: $-2 < x \leq -1$ $0 < x < 4$

Negative: $-6 \leq x \leq -4$ $-3 \leq x < -2$

x-intercept(s): $f(-2) = 0$

y-intercept(s): None

41. Describe the features of the graph below using SET BUILDER notation



Is this a function? No Why? doesn't pass the VLT

Domain: $\{-6, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4\}$

Range: $\{-3, -2, -1, 0, 1, 2, 3, 4\}$

Continuity: Continuous Non-Continuous Discrete

Increasing: NA

Decreasing: NA

Minimum: $f(3) = -3$

Maximum: $f(-1) = 4$

Positive: $\{-6, -3, -1, 0, 2, 4\}$

Negative: $\{-5, -2, 2, 3\}$

x-intercept(s): $f(-4) = 0$ $f(1) = 0$

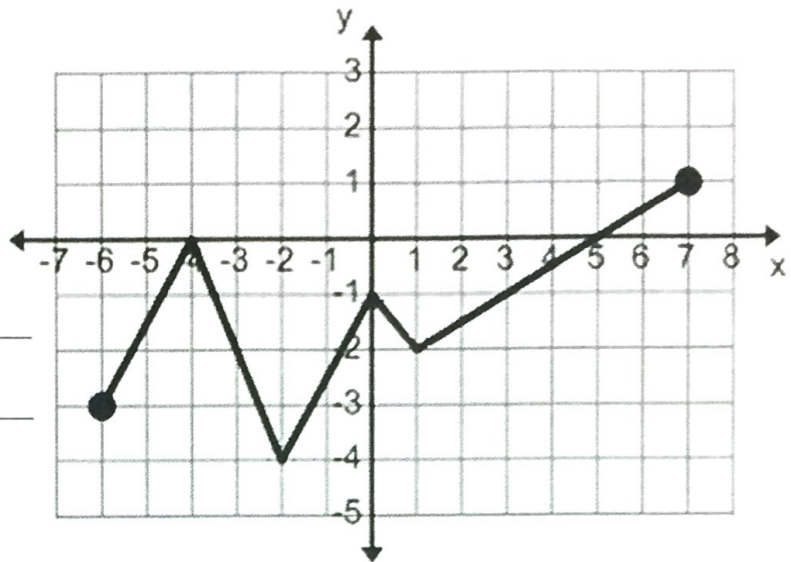
y-intercept(s): $f(0) = 3$

42. Describe the features of the function using INTERVAL NOTATION.

Is this a function? yes

Domain: $[-6, 7]$

Range: $[-4, 1]$



Continuity: Continuous Non-Continuous Discrete

Increasing: $(-6, -4)$ $(-2, 0)$ $(1, 7)$ Decreasing: $(-4, -2)$ $(0, 1)$

Minimum: $f(-2) = -4$ Maximum: $f(7) = 1$

Positive: $(5, 7]$ Negative: $[-6, -4)$ $(-4, 5)$

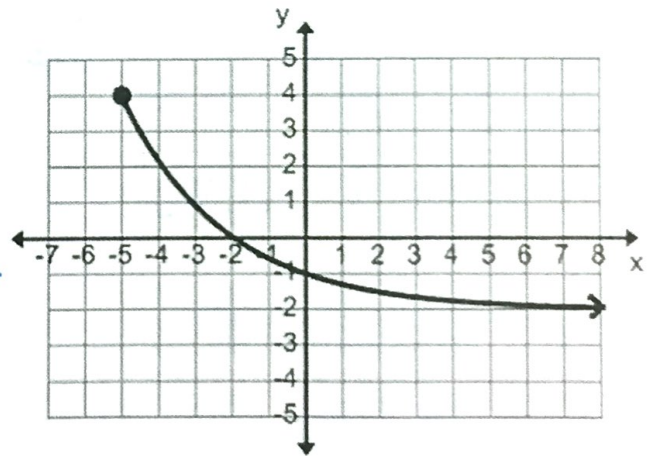
x-intercept(s): $f(-4) = 0$ $f(5) = 0$ y-intercept(s): $f(0) = -1$

43. Describe the features of the function using INTERVAL NOTATION.

Is this a function? yes Why? passes the VLT

Domain: $[-5, \infty)$

Range: $(-\infty, 4]$



Continuity: Continuous Non-Continuous Discrete

Increasing: NA Decreasing: $(-5, \infty)$

Minimum: None Maximum: $f(-5) = 4$

Positive: $[-5, -2)$ Negative: $(-2, \infty)$

x-intercept(s): $f(-2) = 0$ y-intercept(s): $f(0) = -1$

44. Find the average rate of change for the graph above on the interval $[-5, -2]$.

$-\frac{4}{3}$

45. Describe the features of the function using **INTERVAL NOTATION**

Is this a function? Yes Why? passes the VLT

Domain: [0, 10]

Range: [-1, 9]

Continuity: Continuous
~~Non-Continuous~~
 Discrete

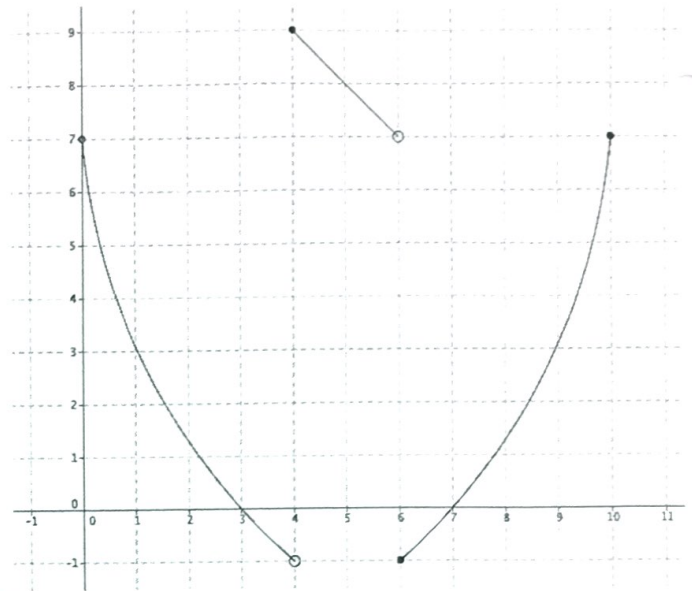
Increasing: (6, 10)

Decreasing: (0, 6)

Minimum: $f(6) = -1$ Maximum: $f(4) = 9$

Positive: [0, 3) [4, 6) (7, 10] Negative: (3, 4) [6, 7)

x-intercept(s): $f(3) = 0$ $f(7) = 0$ y-intercept(s): $f(0) = 7$



46. Describe the features of the function using **INTERVAL NOTATION**

Is this a function? Yes Why? passes the VLT

Domain: [-7, 2]

Range: [-4, -1] (1, 5]

Continuity: Continuous
~~Non-Continuous~~
 Discrete

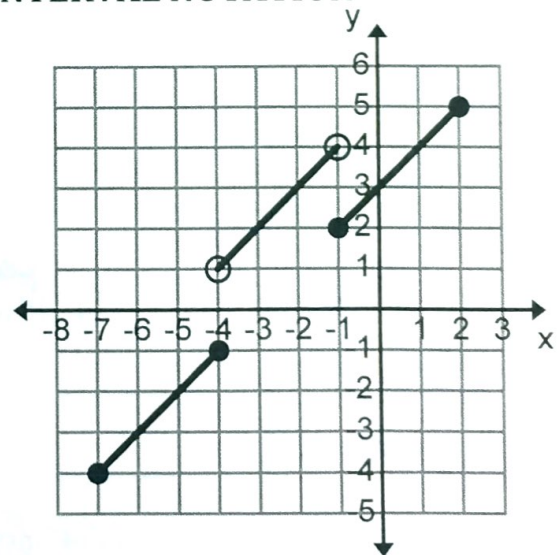
Increasing: (-7, 2)

Decreasing: NA

Minimum: $f(-7) = -4$ Maximum: $f(2) = 5$

Positive: [-4, 2] Negative: [-7, -4]

x-intercept(s): None y-intercept(s): $f(0) = 3$



47. Describe the features of the function using **INTERVAL NOTATION**

Is this a function? Yes Why? passes the VLT

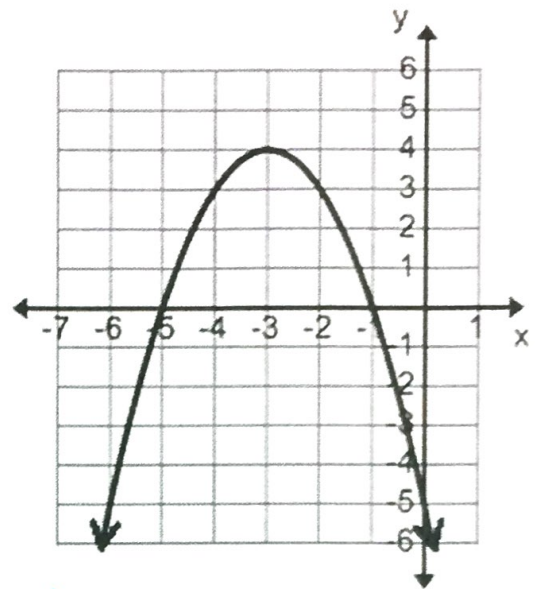
Domain: $(-\infty, \infty)$

Range: $(-\infty, 4]$

Continuity: Continuous
Non-Continuous
Discrete

Increasing: $(-\infty, -3)$

Decreasing: $(-3, \infty)$



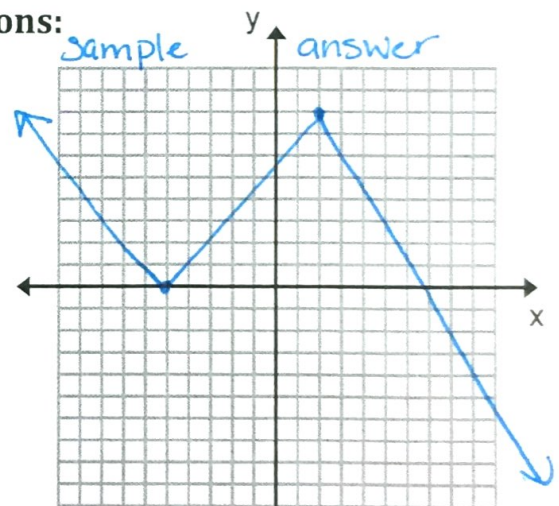
Minimum: None Maximum: $f(-3) = 4$

Positive: $(-5, -1)$ Negative: $(-\infty, -5)$ $(-1, \infty)$

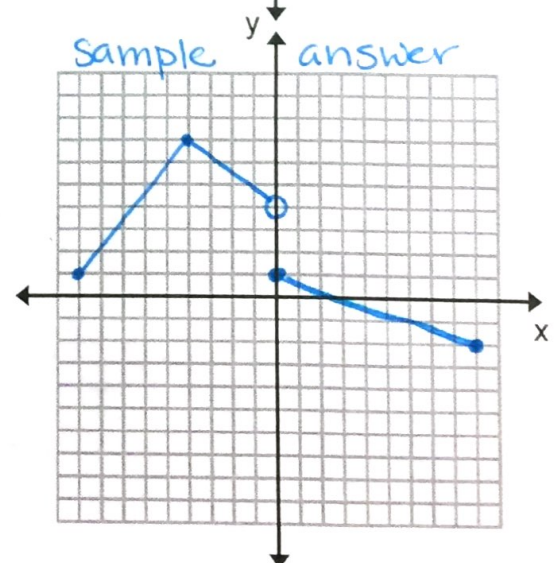
x-intercept(s): $f(-5) = 0$ $f(-1) = 0$ y-intercept(s): $f(0) = -5$

Create a graph that matches the given descriptions:

48. The function has an intercept at $f(-5) = 0$.
The function has no minimum.
The function increases from -5 to 2 and decreases from 2 to infinity.



49. The function has a domain from -9 to 9.
The function has a range from -2 to 7
The function is non-continuous.
The function is positive between -9 to 3.
The function is negative from right after 3 to 9.



MATCHING

Match the following descriptions to the graph they BEST represent.

D

50. The domain is 0 to infinity
The range is negative infinity to infinity.
The graph is continuous.

A

51. The domain is from negative infinity to infinity.
The function has a y intercept at $f(0)=3$
The function never increases and never decreases.
The function is non-continuous.

E

52. The domain is negative infinity to infinity.
The graph is negative from negative infinity to 2.
The graph is always increasing.

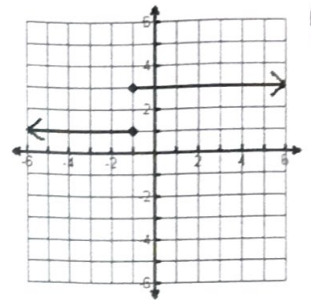
C

53. The domain is -3 and 2.
The range is negative infinity to infinity.
The function has no min and no max
The function is non-continuous.

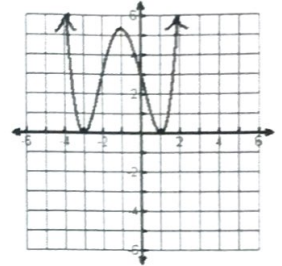
B

54. The domain is negative infinity to infinity.
The range is 0 to infinity.
The function has two increasing intervals.
The function has minimums at $f(-3)=0$ and $f(1)=0$.

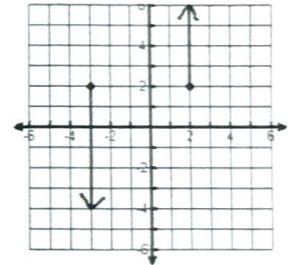
A.



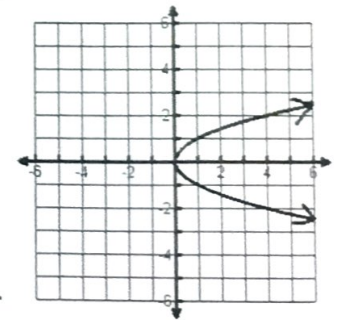
B.



C.



D.



E.

