Student: Cole Lamers **Date:** 06/16/19	**Instructor:** Kelly Galarneau **Course:** CA&T Internet (70263) Galarneau	**Assignment:** 2.4 Functions

1. Fill in the blank.

In the functional notation y = f(x), x is the independent variable.

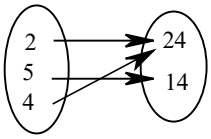
2. Complete the following statement.

If the point (9, − 14) is on the graph of a function f, then f(9) = _____.

What is the value of f(9)?

− 14

3. Determine whether the relation is a function, and give the domain and range.



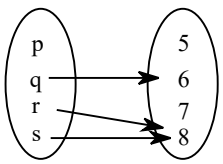
Is this relation a function?

- [x] Yes
- [ ] No

The domain is { 2,4,5 }.
(Use a comma to separate answers as needed. Type each answer only once.)

The range is { 14,24 }.
(Use a comma to separate answers as needed. Type each answer only once.)

4. Determine the domain and range of the relation shown to the right. If the relation is not a function, explain why.



The domain is { q,r,s } and the range is { 6,8 }.
(Use a comma to separate answers as needed.)

Is the given relation a function? If not, explain why.

- [ ] **A.** No, the given relation is not a function because each element of the domain has a unique corresponding element of the range.
- [ ] **B.** No, the given relation is not a function because each element of the domain does not have a unique corresponding element of the range.
- [x] **C.** Yes, the given relation is a function.

5. Determine the domain and the range of the relation. State whether the given relation is a function.

What is the domain?

$\{-3,-2,-1,0,1,2\}$
(Use a comma to separate answers as needed. Type each answer only once.)

What is the range?

$\{1,3,4,5\}$
(Use a comma to separate answers as needed. Type each answer only once.)

Is the given relation a function?

- No
- Yes

x	y
−3	3
−2	3
−1	1
0	5
1	4
2	1

6. Determine whether the following equation defines y as a function of x.

$x + y = 22$

Does the equation $x + y = 22$ define y as a function of x?

- Yes
- No

7. Determine whether the following relation is a function.

$$y = \frac{1}{x+3}$$

Is the relation a function?

- Yes
- No

8. Watch the video and then solve the problem given below.

Click here to watch the video.[1]

Which of the following is a point on the graph of $y = f(x) = x^2 - 3x + 5$?

Choose the correct answer below.

- **A.** $(-2,15)$
- **B.** $(-2,-5)$
- **C.** $(-2,7)$
- **D.** $(-2,3)$

1: http://mediaplayer.pearsoncmg.com/assets/AzvkFP4Mt9QNiESqiIJwZayjnLCV2Xlv?clip=8

9. Determine whether the given equation defines y as a function of x.

$x = |15y|$

Is y a function of x in the given equation?

- [x] No
- [ ] Yes

10. Determine whether the following equation defines y as a function of x.

$x^2 + y^2 = 144$

Does the equation $x^2 + y^2 = 144$ define y as a function of x?

- [ ] Yes
- [x] No

11. Determine whether the following equation represents y as a function of x.

$x^5 + y^7 = 1$

Does the equation $x^5 + y^7 = 1$ represent y as a function of x?

- [ ] No
- [x] Yes

12. Evaluate the function $f(x) = x^2 - 5x + 6$ at the given values of the independent variable and simplify.

a. $f(1)$ **b.** $f(x + 5)$ **c.** $f(-x)$

a. $f(1) =$ 2 (Simplify your answer.)

b. $f(x + 5) =$ $x^2 + 5x + 6$ (Simplify your answer.)

c. $f(-x) =$ $x^2 + 5x + 6$ (Simplify your answer.)

13. Find the domain.

$p(x) = 2x - 1$

Choose the correct domain below.

- [x] **A.** $(-\infty,\infty)$
- [ ] **B.** $(0,\infty)$
- [ ] **C.** $(-\infty,2) \cup (2,\infty)$
- [ ] **D.** $(-\infty,0) \cup (0,\infty)$

14. Find the domain of the following function.

$$f(x)=\frac{3}{x+7}$$

Choose the correct domain below.

- **A.** $(-7,\infty)$
- **B.** $(-\infty,-7)$ or $(-7,\infty)$ ✔
- **C.** $(-\infty,-7)$
- **D.** $(-\infty,-7]$ or $[-7,\infty)$

15. Find the domain of the function.

$$g(x)=\frac{5x}{x^2-36}$$

The domain is $(-\infty,-6)\cup(-6,6)\cup(6,\infty)$.
(Type your answer in interval notation.)

16. Find the domain of the following function.

$$G(x)=\frac{\sqrt{x-9}}{x+2}$$

The domain of the function is $[9,\infty)$.
(Type your answer in interval notation.)

17. Find the domain of the function.

$$f(x)=\frac{x+5}{x^2-2x-15}$$

Choose the correct domain below.

- **A.** $(-\infty,\infty)$
- **B.** $(-\infty,-15)\cup(-15,-2)\cup(-2,\infty)$
- **C.** $(-\infty,-3)\cup(-3,5)\cup(5,\infty)$ ✔
- **D.** $(-\infty,-5)\cup(-5,3)\cup(3,\infty)$

18. Find the domain of the function shown below.

$$g(x)=\frac{\sqrt{x^2+6}}{5x}$$

What is the domain of the function?

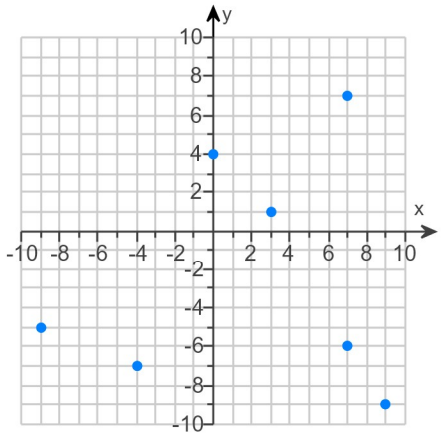
$(-\infty,0)\cup(0,\infty)$ (Type your answer in interval notation.)

19.

Use the vertical line test to determine if the graph is a function.

Is this the graph of a function?

- [x] No
- [ ] Yes

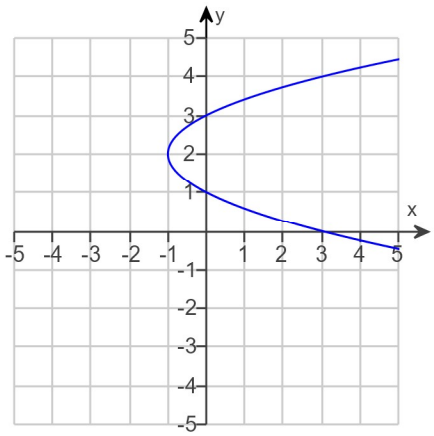


20.

Use the vertical line test to determine whether the graph is the graph of a function.

Is this the graph of a function?

- [ ] Yes
- [x] No



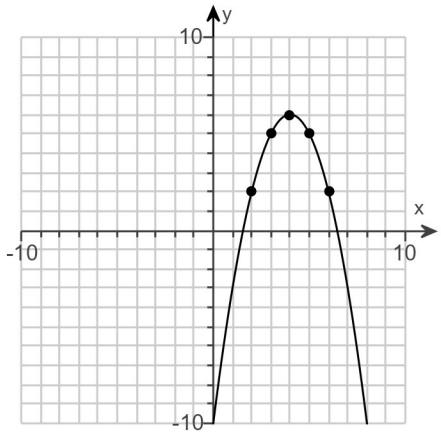
21.

The graph of the function h(x) is shown. Find the function values h(2), h(4), and h(5).

h(2) = 2

h(4) = 6

h(5) = 5



22. Let $f(x) = 2x^2 - x - 1$.

a. Is (2,5) a point of the graph of f?
b. Find all x such that (x, − 1) is on the graph of f.
c. Find all y-intercepts of the graph of f.
d. Find all x-intercepts of the graph of f.

a. Choose the correct answer below.

- [x] Yes
- [ ] No

b. For x = $0, \frac{1}{2}$, (x, − 1) is on the graph of f.

(Use a comma to separate answers as needed.)

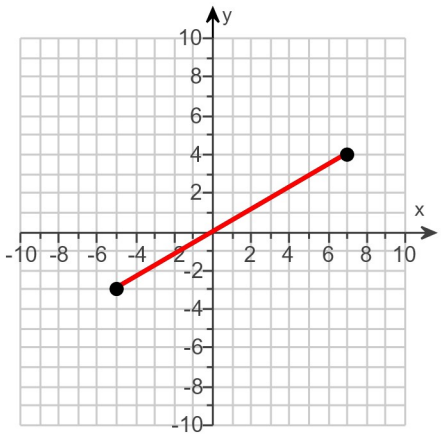
c. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- [x] **A.** The y-intercept(s) is/are -1.
  (Use a comma to separate answers as needed.)
- [ ] **B.** There are no y-intercepts.

d. Select the correct choice below and, if necessary, fill in the answer box to complete your choice.

- [x] **A.** The x-intercept(s) is/are $-\frac{1}{2}, 1$.
  (Use a comma to separate answers as needed.)
- [ ] **B.** There are no x-intercepts.

23. Find the domain and range of the function shown in the graph to the right.



What is the domain of the function?

$[-5,7]$

(Type your answer in interval notation.)

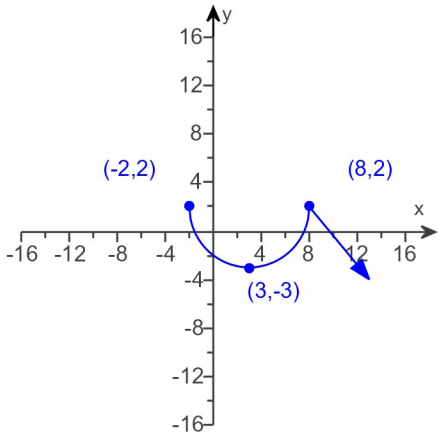
What is the range of the function?

$[-3,4]$

(Type your answer in interval notation.)

24.

Use the graph to determine the domain and range of the function.



What is the domain of the function?

$[-2,\infty)$

(Type your answer in interval notation.)

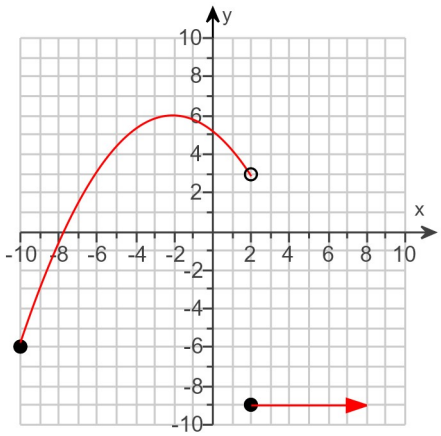
What is the range of the function?

$(-\infty,2]$

(Type your answer in interval notation.)

25.

Find the domain and range of the function shown in the graph to the right.



What is the domain of the function?

$[-10,\infty)$

(Type your answer in interval notation.)

What is the range of the function?

$\{-9\}\cup[-6,6]$

(Type your answer in interval notation.)