MS 120 In-class Problems

August 21, 2025

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Chapter R Section R1.2

1.2.001 Use the values in the following table.

x	-6	-1	0	3	4.2	9	12	14	15	22
y	0	0	1	5	9	12	38	22	22	70

1. Explain why the table defines y as a function of x.

   - ◯ For each value of y there are multiple values for x.
   - ◯ For each value of y there is only one x.
   - ◯ For each value of x there are multiple values for y.
   - ◯ For each value of x there is only one y.
   - ◯ For some values of y there are multiple values for x.

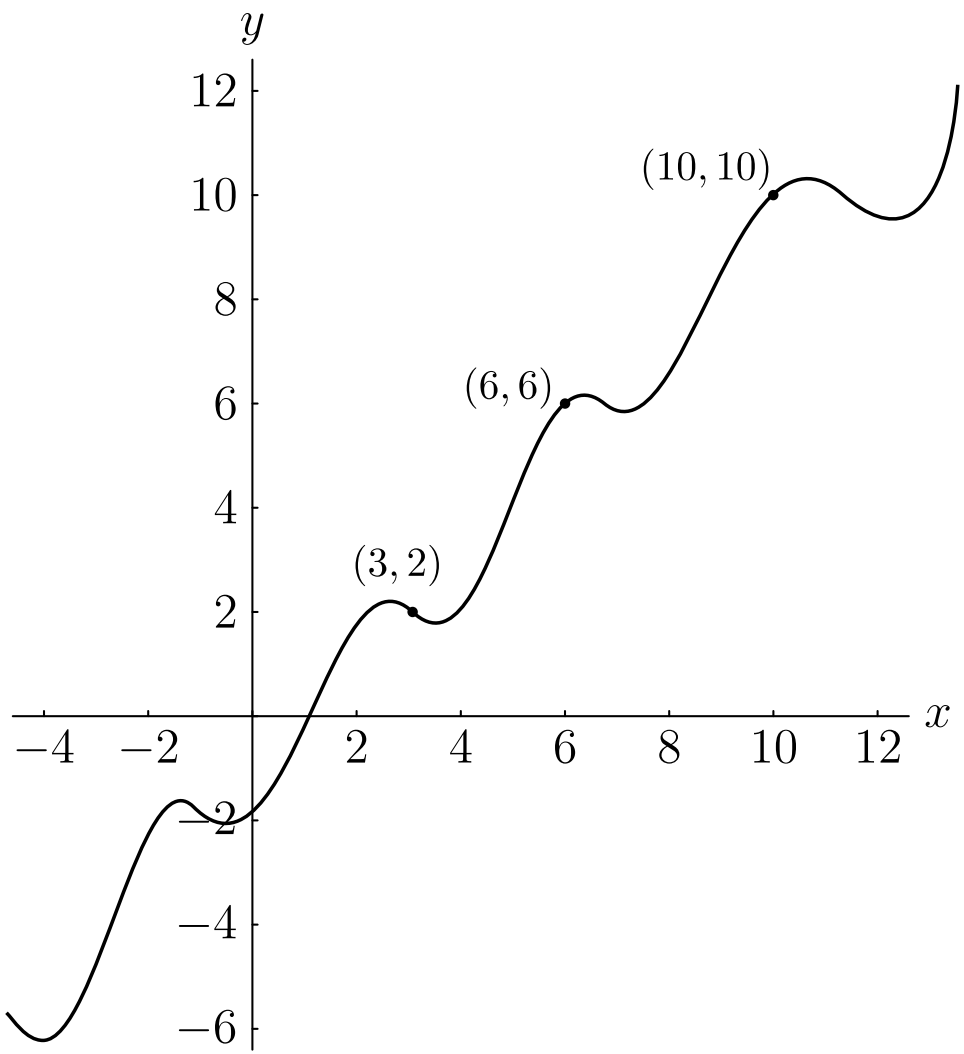
2. State the domain and range of this function.

   domain:
   range:

3. If the table expresses $y = f(x)$, find $f(0)$ and $f(12)$. (If the table does not express $y = f(x)$, enter DNE.)

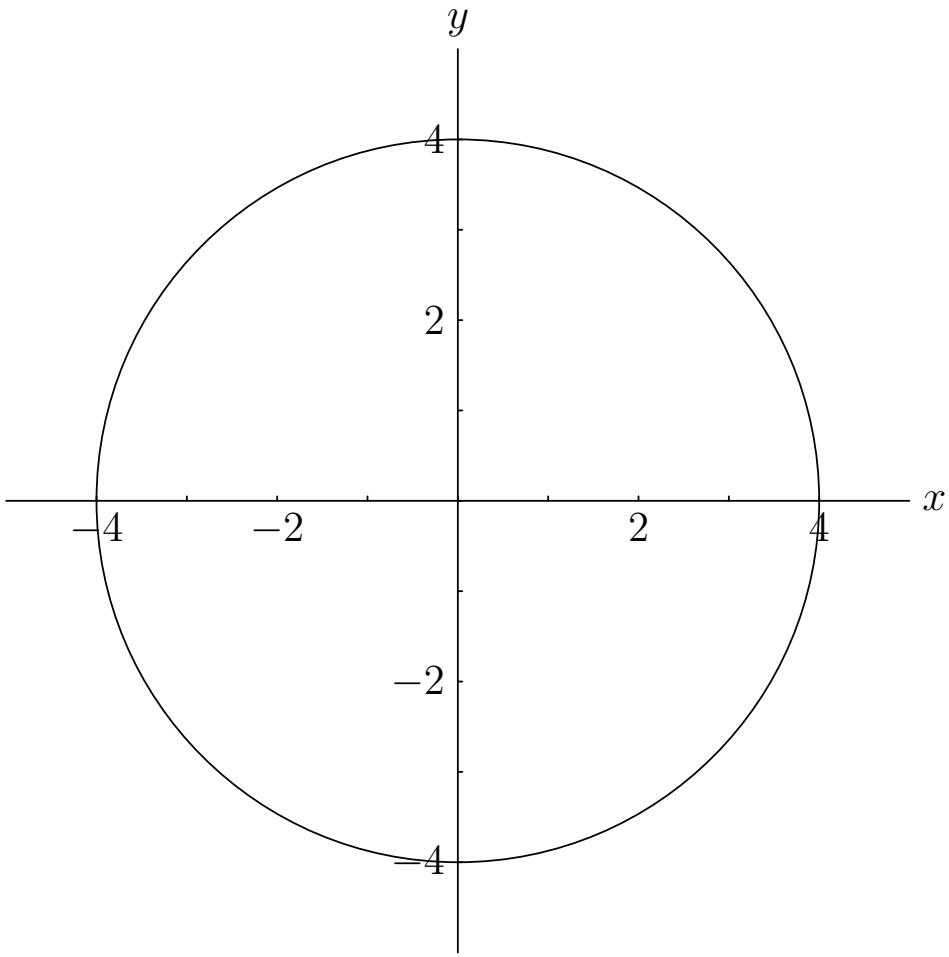
   $f(0) =$
   $f(12) =$

1.2.005a Determine whether the graph represents y as a function of x. Explain your answer.



- Yes, the vertical line test shows that the graph represents y as a function of x.
- Yes, the horizontal line test shows that the graph represents y as a function of x.
- No, the vertical line test shows that the graph does not represent y as a function of x.
- No, the horizontal line test shows that the graph does not represent y as a function of x.
- There is no way to determine this using the graph.

1.2.005b Determine whether the graph represents y as a function of x. Explain your answer.



- Yes, the vertical line test shows that the graph represents y as a function of x.
- Yes, the horizontal line test shows that the graph represents y as a function of x.
- No, the vertical line test shows that the graph does not represent y as a function of x.
- No, the horizontal line test shows that the graph does not represent y as a function of x.
- There is no way to determine this using the graph.

1.2.009 If $R(x) = 8x - 11$, find the following. (Give exact answers. Do not round.)

1. $R(0) =$

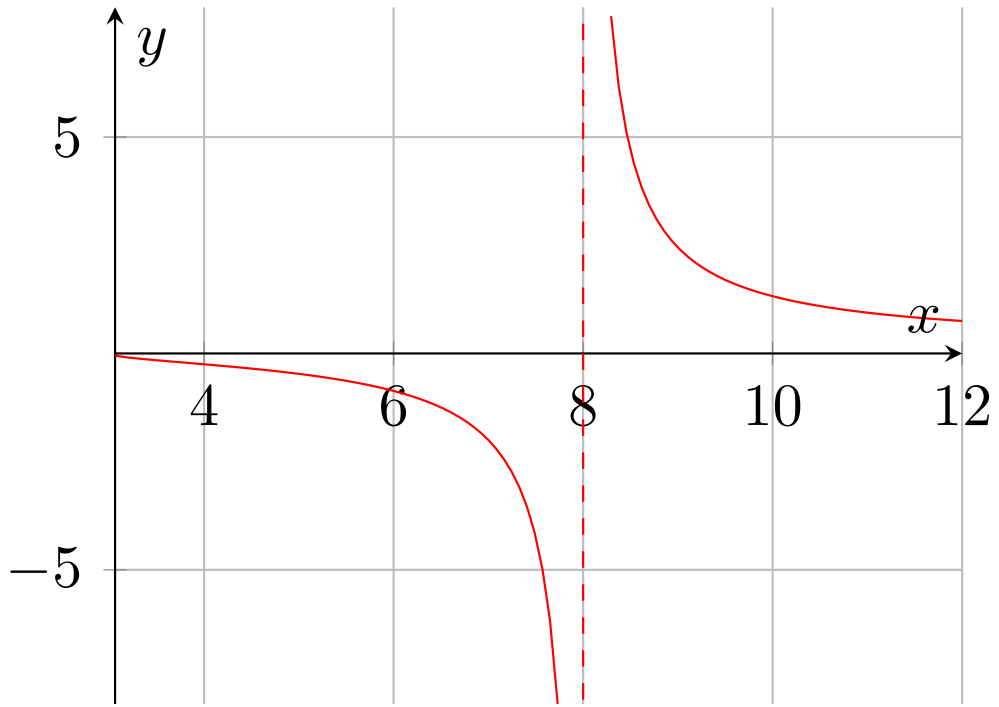
2. $R(2) =$

3. $R(-3) =$

4. $R(1.6) =$

1.2.029 A function and its graph are given. Find the domain. (Enter your answer using interval notation.)

$$f(x) = \frac{\sqrt{x-3}}{x-8}$$



Chapter R Section R1.3

1.3.001 Find the intercepts and graph.

$$5x + 8y = 40$$

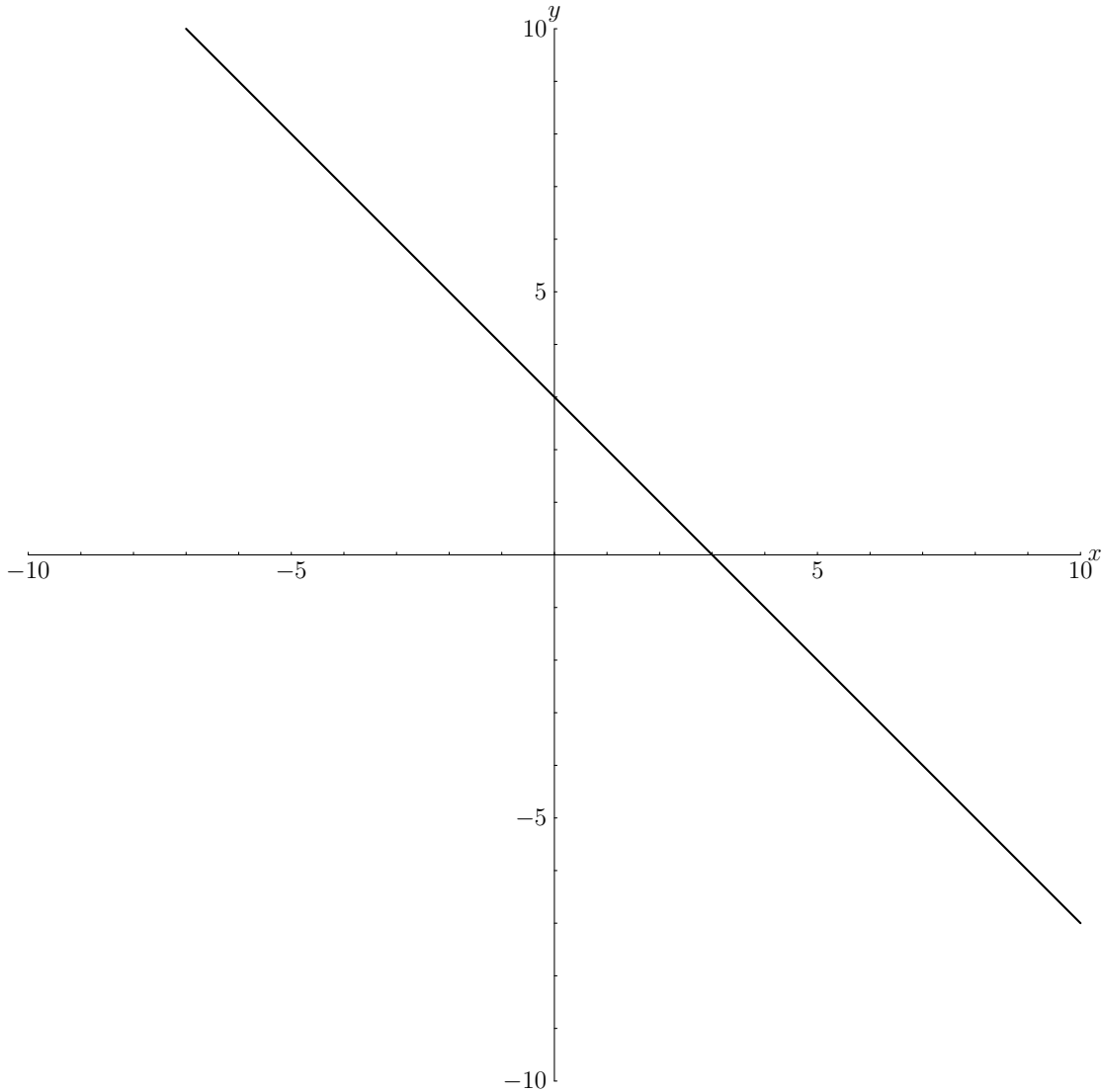
1.3.005 Find the slope m of the line passing through the given pair of points. (If an answer is undefined, enter UNDEFINED.)

$$(20, 21) \text{ and } (14, -3)$$

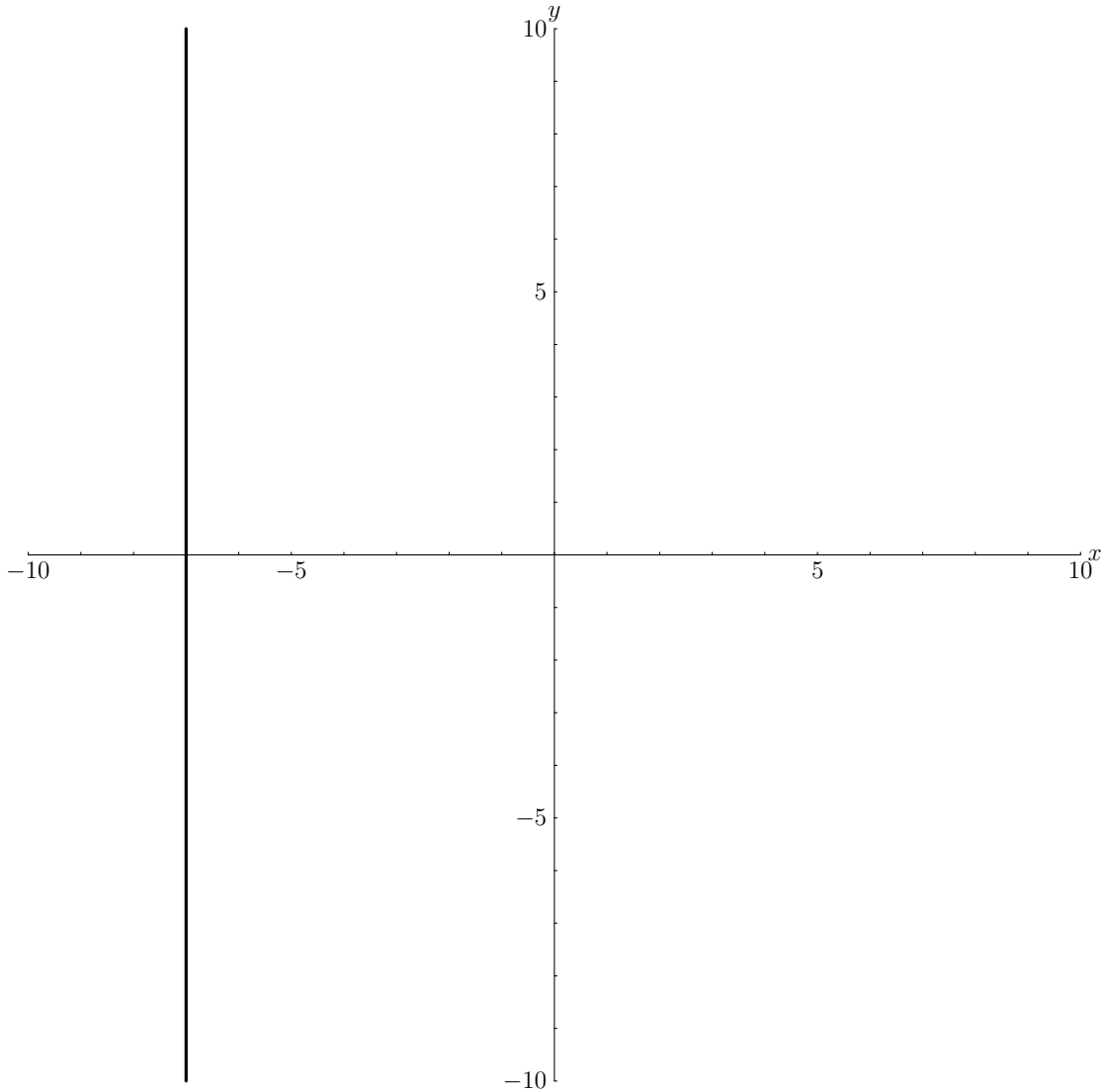
1.3.011 If a line is horizontal, then its slope is _____.

1.3.013 What is the rate of change of the function whose graph is a line passing through $(3, 4)$ and $(-1, 4)$?

1.3.015a For the given graph, determine whether the line has a slope that is positive, negative, 0, or undefined.



1.3.015b For the given graph, determine whether the line has a slope that is positive, negative, 0, or undefined.



1.3.017 Find the slope m and y-intercept b. (Give exact answers. Do not round. If an answer is undefined, enter UNDEFINED. If an answer does not exist, enter DNE.)

$$y = \frac{7}{3}x - \frac{1}{2}.$$

1.3.023 Find the slope m and y-intercept b. (Give exact answers. Do not round. If an answer is undefined, enter UNDEFINED. If an answer does not exist, enter DNE.)

$$2x + 7y = 14.$$

1.3.025 Write the slope-intercept form of the equation of the line that has the given slope and y-intercept.

Slope $\frac{1}{3}$ and y-intercept -3

1.3.033 Write the equation of the line that passes through the given point and has the given slope.

$(-2, 2)$ with undefined slope

1.3.035 Write the equation of the line described.

Through $(4, 5)$ and $(-1, -5)$

1.3.041 Determine whether the following pair of equations represents parallel lines, perpendicular lines, or neither of these.

$$3x + 8y = 24; \quad 8x - 3y = 24$$

1.3.045 Write the equation of the line passing through $(-2, -1)$ that is parallel to $3x + 5y = 11$.