# MS 120 In-class Problems

January 6, 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:

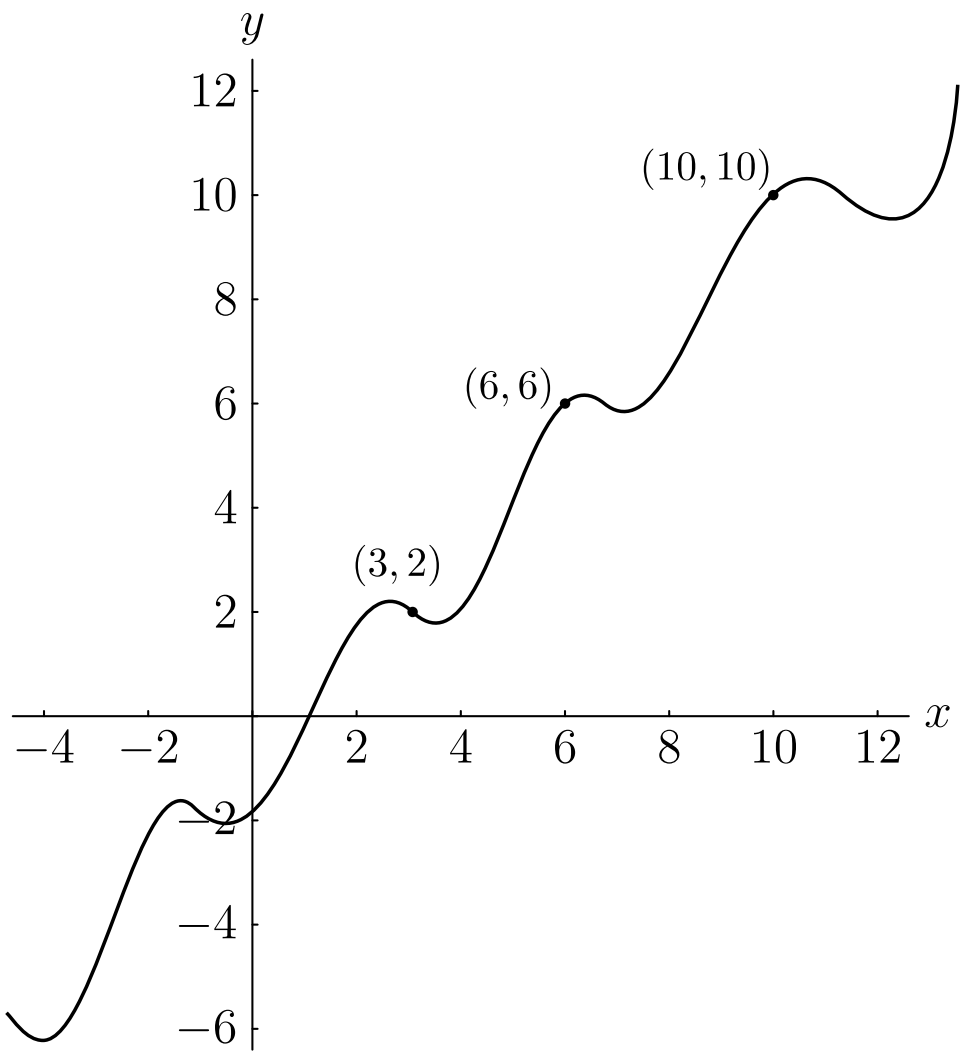
   range:

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.)

   $f(0) =$

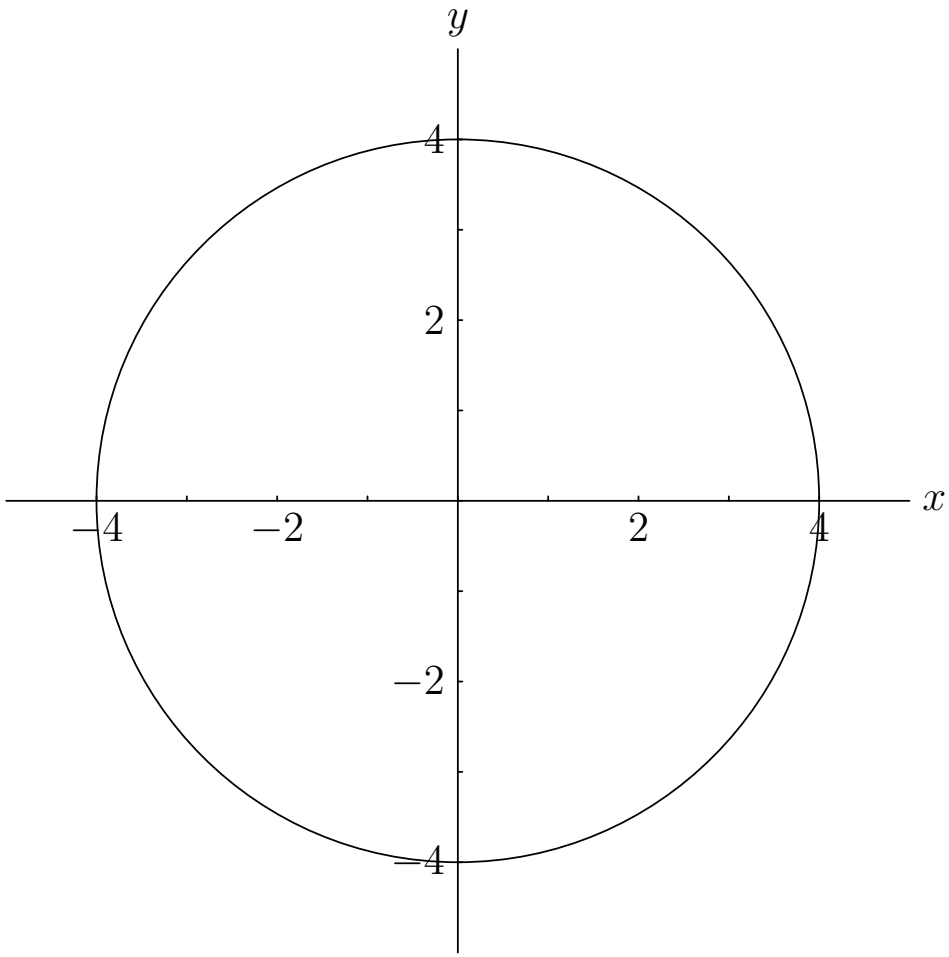
   $f(12) =$

**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. $R(0) =$

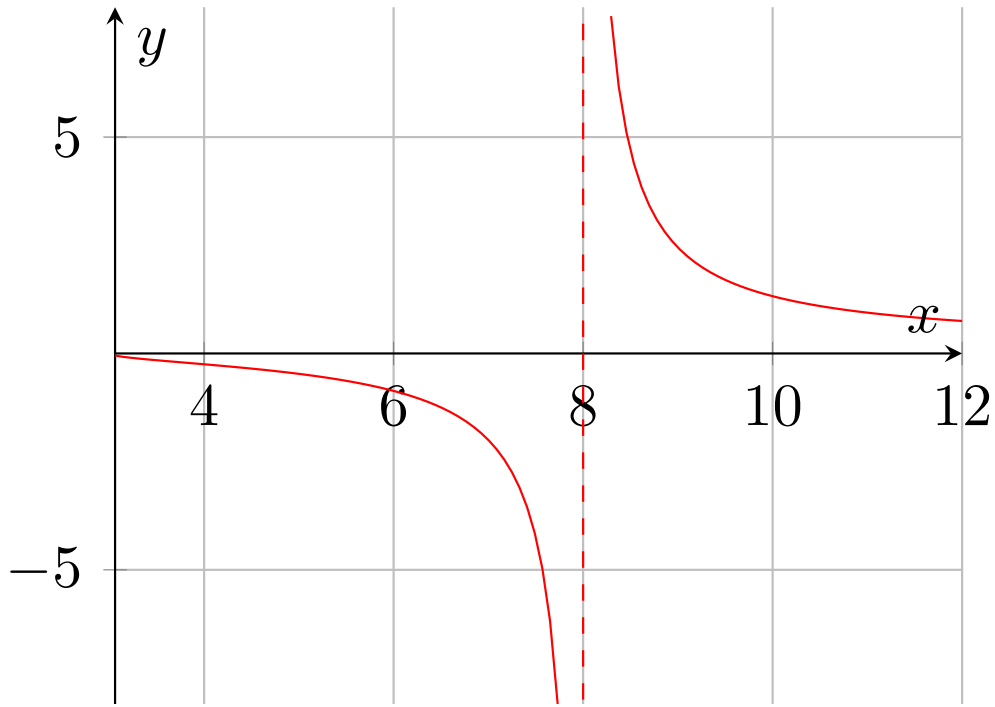
2. $R(2) =$

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.

$$5x + 8y = 40$$

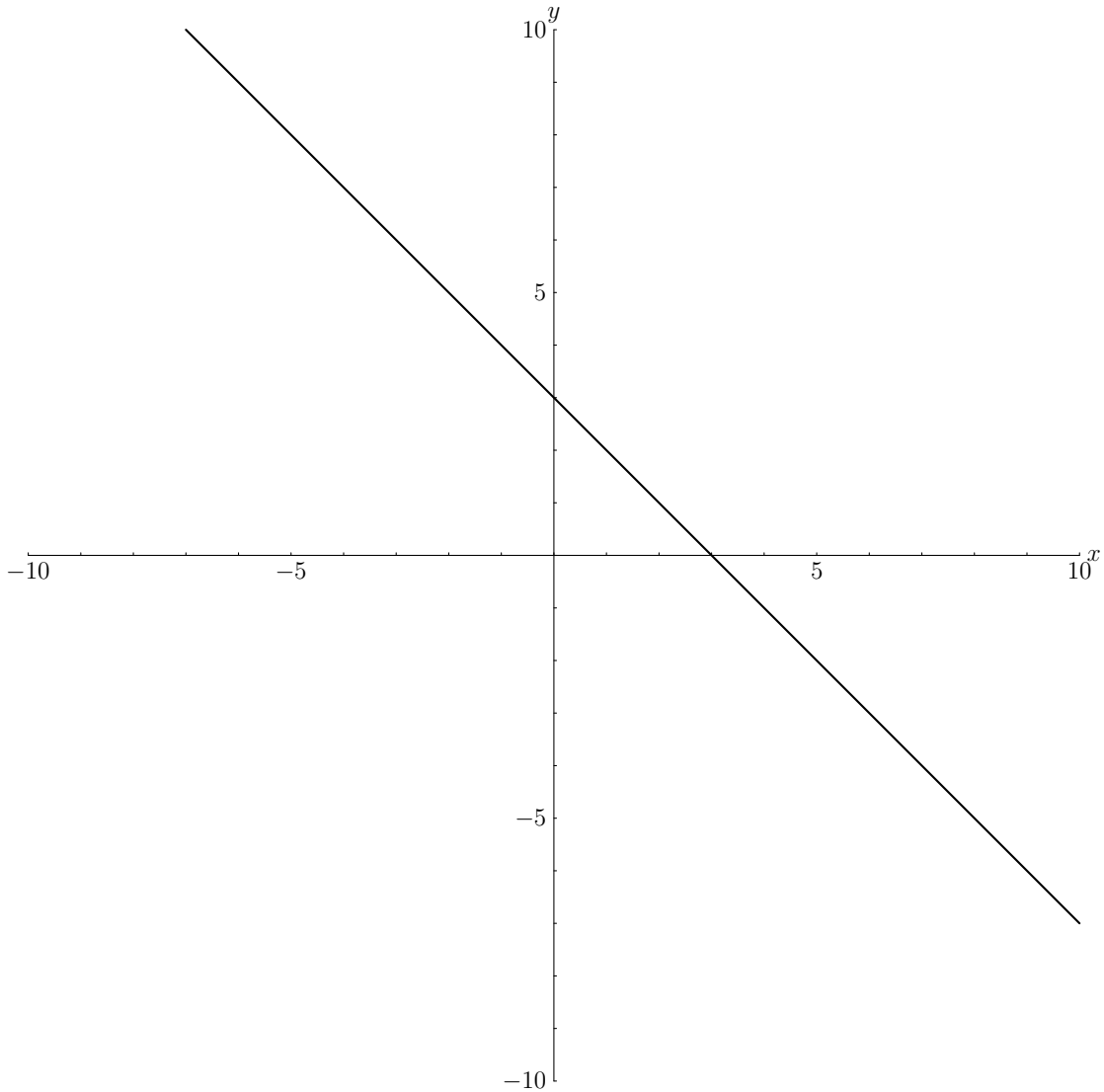
**1.3.005** Find the slope $m$ of the line passing through the given pair of points. (If an answer is undefined, enter UNDEFINED.)

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

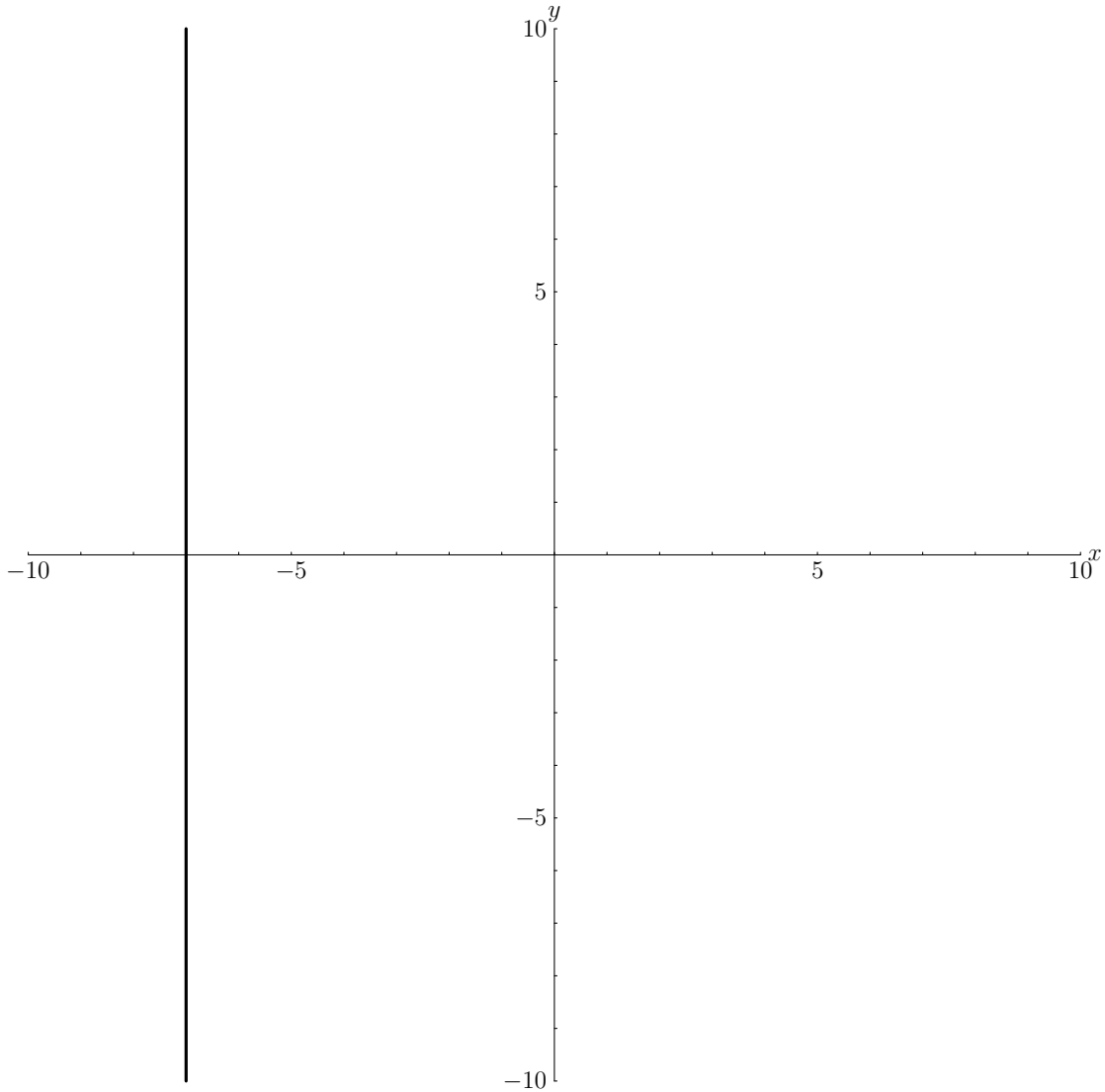
**1.3.011** If a line is horizontal, then its slope is _____.

**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 $3x + 5y = 11$.