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Mathematics 10C
MAT1791
Unit 6 Final Review Workbook

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Summary

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Unit 6 Final Review Assignment		39	

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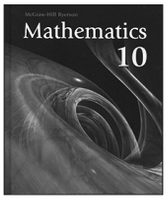

Mathematics 10

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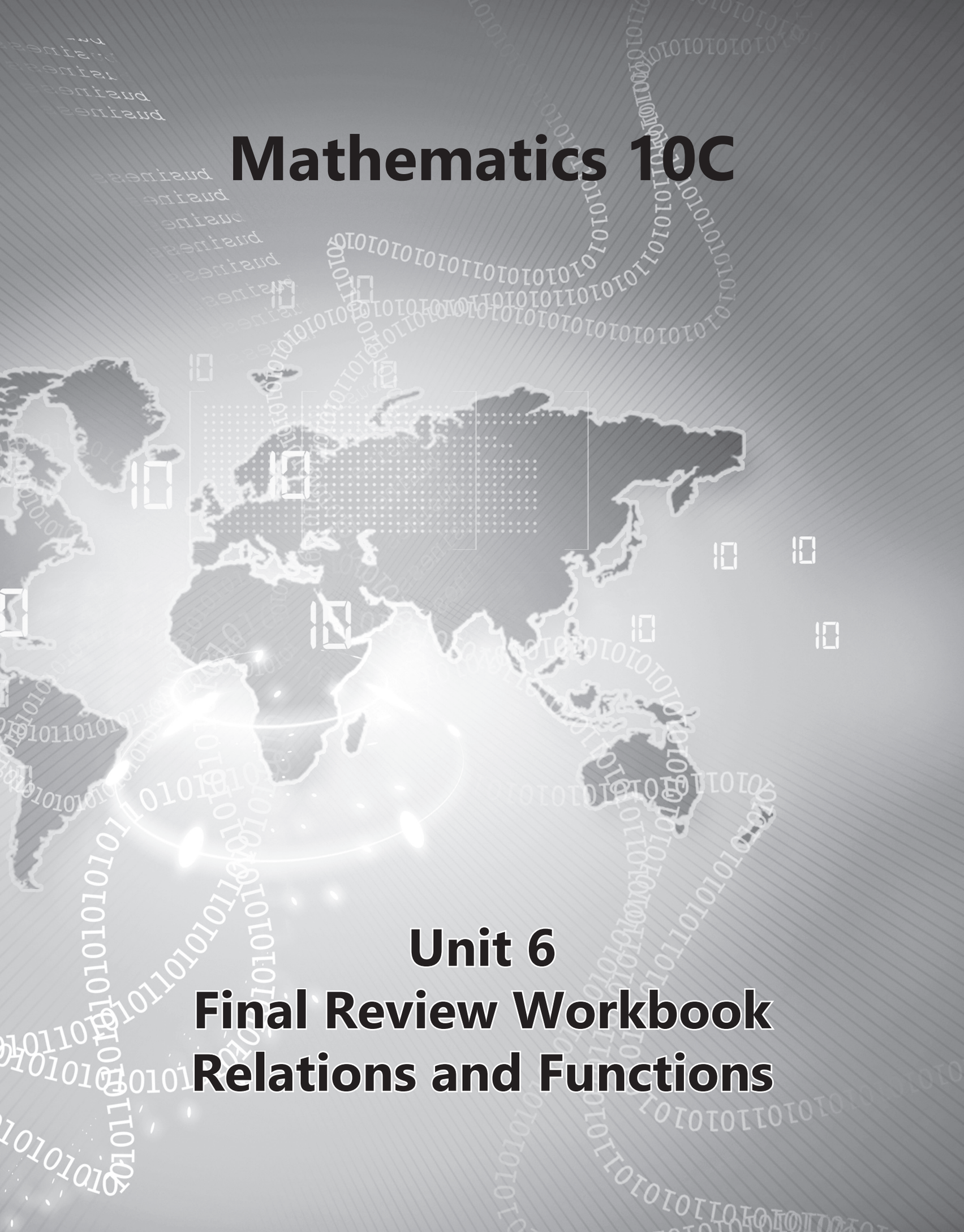
Mathematics 10C

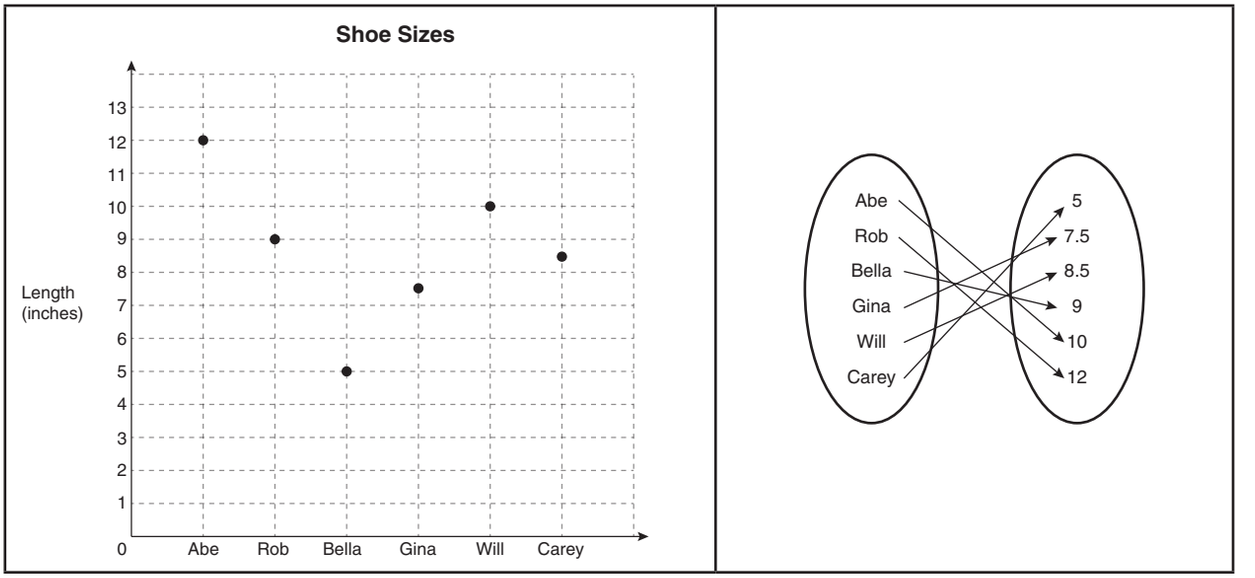


Unit 6
Final Review Workbook
Relations and Functions

Unit 6: Relations and Functions Final Review Assignment

Final Review Assignment

1. The graph and the mapping diagram shown represent the same relation. The graph is correct, but the mapping diagram is not.



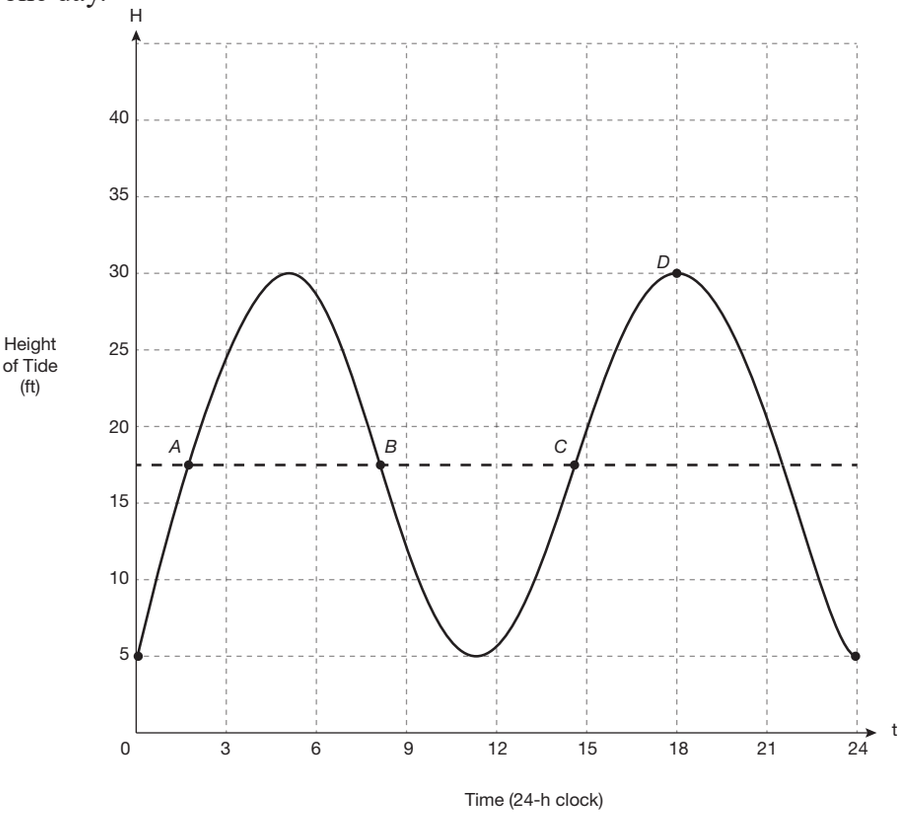
(1) a. Which pairing in the mapping diagram is correct?

(1) b. Write the relation as a set of ordered pairs.

(1) c. State the domain and range of the relation.

(2) d. Is this relation a function, linear, or a combination thereof? Explain.

2. The graph shown gives the height of the tide in a harbour as a function of time over the course of one day.



(1) a. What is the greatest and lowest height of the tide?

(1) b. At approximately what time in the morning is the tide at its lowest height?

(1) c. What is happening to the tide at Point *C*?

(1) d. Does the graph represent a linear function? Explain.

(2) e. Using set builder notation, state the domain and range of the graph.

3. The following scenarios represent relations that can be graphed. For which of the graphs should the data values be continuous? Explain why or why not.

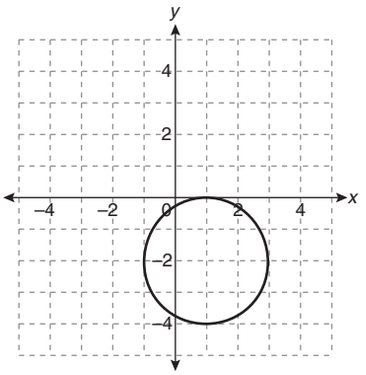
(1) a. The mass of a stack of coins as a function of the number of coins.

(1) b. The temperature in Vancouver as a function of the time of day.

(1) c. The mass of an animal as a function of its age.

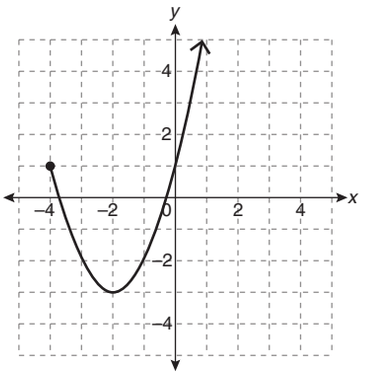
(1) d. The price of a carton of milk as a function of the size of the carton.

(4) 4. State the domain and range of the following graphs. Express each domain using interval notation and express each range using set-builder notation.



Domain:

Range:



Domain:

Range:

(2) 5. a. Identify the independent variable and the dependent variable for the relation represented by the table of values shown.

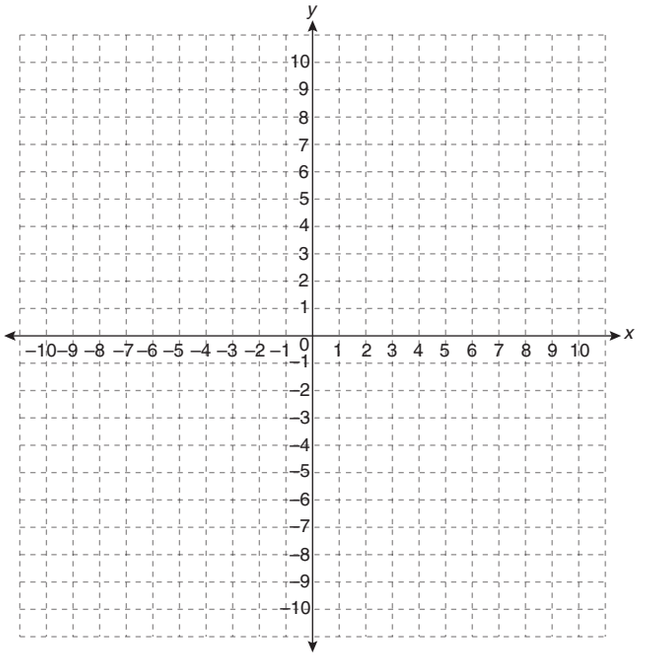
Hours Worked, *h*	**Gross Pay, *P* ($)**
4	38.00
5	47.50
9	85.50
20	190.00
30	285.00

(1) b. State the rate of hourly rate of pay.

(1) c. Determine how much gross pay would be paid out for 22 hours of work.

(2) 6. a. Graph the line, given a point on the line and its slope.

$(-4, -2)$ and $m = \frac{3}{5}$

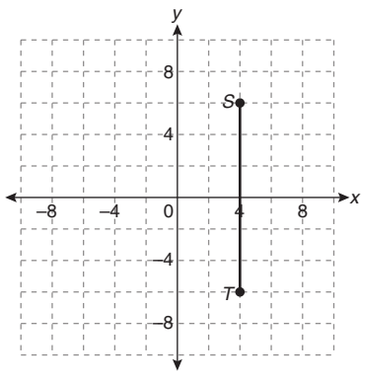


(1) b. State two other points on the line.

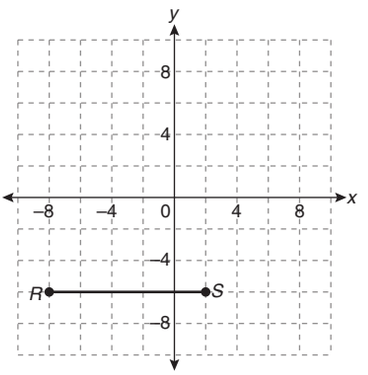
(2) 7. Use the slope formula to determine the slope of the line passing through the following set of points.

$E(-61, 42)$ and $F(-34, -12)$

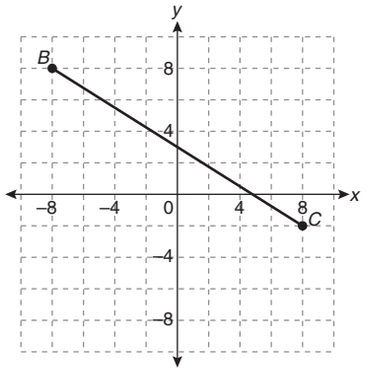
(2) 8. Identify the slope of each of the line segments as positive, negative, zero, or undefined?



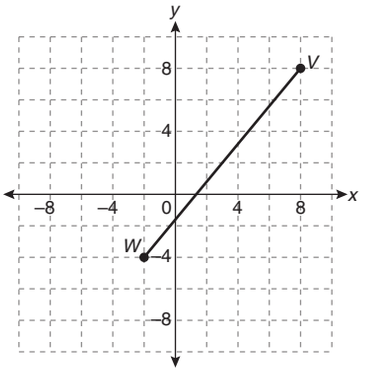
Slope:



Slope:



Slope:



Slope:

(2) 9. The function $C(f) = \frac{5}{9}(f - 32)$ converts a temperature, f, in degrees Fahrenheit, to a temperature, C, in degrees Celsius. Determine $C(52)$, to the nearest degrees Celsius.

10. A gas station attracts customers by offering coupons worth a \$0.05 discount for every \$1.00 spent on gasoline.

(2) a. Complete the table.

Value of Gas Purchase, g (\$)	Coupon Discount Value, c (\$)
1	
2	
	0.60
20	
	2.00
50	

The equation that represents the relation, using the variable c for value of the coupon's discount and the variable g for value of the gas purchase, is $c = 0.05\ g$.

(1) b. Use function notation to express c as a function of g.

(2) c. What is the value of the discount a customer will receive if she spends $80 on gasoline?

(2) d. How much does a customer have to spend on gasoline to receive a $5.00 discount?

/39

Unit 6: Relations and Functions

Unit Checkpoint

Use the *Check Point* to check and reflect before completing the *Test Your Understanding Quiz* for *Unit 6: Relations and Functions*.

I understand how to:

***Unit 6* Concepts**	Place a checkmark in the appropriate column		
	Yes	**No**	**Maybe**
Describe a possible situation for a given graph			
Identify independent and dependent variable in a given context			
Understand the difference between continuous and discrete data			
Sketch a possible graph for a given situation			
Determine, and express in a variety of ways, the domain and range of a graph, a set of ordered pairs or a table of values			
Express in a variety of ways the domain and range of a graph of a relation			
Graph, with or without technology, a set of data, and determine the restrictions on the domain and range			
Explain why data points should or should not be connected on the graph for a situation			
Graph linear relations given a table of values, a given situation, or an equation			
Determine whether a graph, a table of values, a set of ordered pairs, a situation, or an equation represents a linear relation. Explain why or why not			
Match corresponding representations of linear relations			
Draw a graph from a set of ordered pairs within a given situation, and determine whether the relationship between the variables is linear			
Understand the relationship between rate of change and the slope of a line			
Determine the slope of a line segment by measuring or calculating the rise and run			

***Unit 6* Concepts**	Place a checkmark in the appropriate column		
	Yes	**No**	**Maybe**
Classify lines in a given set as having positive or negative slopes			
Explain the meaning of the slope of a horizontal or vertical line			
Explain why the slope of a line can be determined by using any two points on that line			
Draw a line, given its slope and a point on the line			
Determine another point on a line, given the slope and a point on the line			
Explain, using examples, why some relations are not functions, but all functions are relations			
Determine if a set of ordered pairs represents a function			
Sort a set of graphs as functions or non-functions			
Generalize and explain rules for determining whether graphs and sets of ordered pairs represent functions			
Express the equation of a linear function in two variables, using function notation			
Express an equation given in function notation as a linear function in two variables			
Sketch the graph of a linear function expressed in function notation			
Solve for the domain and range values when given the range and domain values for a linear function			

If you have any concerns from the *Check Point*, please refer to *Enhance Your Understanding* in the *Module* for designated practice questions and their solutions to help you improve your skills.

Contact your teacher for assistance and clarification as needed.

You have completed the *Lessons* and *Workbooks* for *Unit 6: Relations and Functions*. Please review all work in *Unit 6 Final Review Workbook* to ensure it is your best work. Submit *Unit 6 Final Review Workbook* for marking at this time and continue your training with the next unit, *Unit 7: Linear Graphs and Equations*.

Complete the *Test Your Understanding Quiz* when you have reviewed the feedback provided by your marker for *Workbooks 6.1, 6.2, 6.3, 6.4,* and *Unit 6 Final Review*.

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