Cumulative Review

1. Determine whether the 2 ratios for each item are proportional by using simplification.

   If they are proportional, write the ratios as a proportion. If they are not proportional, write "not proportional."

   a. $\frac{6}{9}$ and $\frac{10}{15}$

   b. $\frac{9}{15}$ and $\frac{8}{10}$

2. Create an equivalent ratio for the given ratio below by multiplying the top and bottom by a scale factor ($\frac{3}{3}$, $\frac{4}{4}$, etc.).

   Check for equivalence by simplifying both ratios.

   Write the proportion, showing that the 2 ratios are equivalent and, therefore, proportional.

Given Ratio	Scale Factor *(multiply by the same number)*	Equivalent Ratio
$\frac{\text{6 apples}}{\text{9 bananas}}$	$\frac{x}{x}$	$\frac{\text{apples}}{\text{bananas}}$
Check for equivalence: $\frac{6}{9} = \frac{\quad}{\quad}$		$\frac{\quad}{\quad} = \frac{\quad}{\quad}$
Write the proportion: $\frac{\quad}{\quad} = \frac{\quad}{\quad}$		

Practice 1

Read the first scenario. Then, for the first 2 rows of the table, write both possible processes to get from the value in the *x* column to the value in the *y* column. Then, determine which process is consistent between the 2 rows and complete the table by using this process. Finally, answer the questions below the table.

1. There are 6 wheels for every school bus.

School buses *x*	Process		Wheels *y*
	Add	Multiply	
1			6
2			12
3			
4			
10			
x			

What is the general rule for this scenario? $y =$ _____

Is the scenario additive or multiplicative? _____

Practice 1 (cont.)

Read the second scenario. Then, choose your own values for the *x* column of the table and fill in the corresponding processes and *y* values. Finally, answer the questions below the table.

2. Susan planted a tree that was 9 inches tall after 1 year. Each year, the tree grew another inch.

Year *x*	Process		Tree height (in inches) *y*
	Add	Multiply	
10			
x			

What is the general rule for this scenario? $y =$ _____

Is the scenario additive or multiplicative? _____

Compare your answers with a partner and discuss your reasoning.

Practice 2

Read the first scenario. Then, for the first 2 rows of the table, write both possible processes to get from the value in the *x* column to the value in the *y* column. Then, determine which process is consistent between the 2 rows and complete the table by using this process. Finally, answer the questions below the table.

1. The snow was 6 inches deep when Sandra woke up this morning. It continued to snow 1 inch every hour.

Time passed (in hours) *x*	Process		Snowfall (in inches) *y*
	Add	Multiply	
1			7
2			8
3			
4			
10			
x			

What is the general rule for this scenario? $y =$ _____

Is the scenario additive or multiplicative? _____

Practice 2 (cont.)

Read the second scenario. Then, choose your own values for the *x* column of the table and fill in the corresponding processes and *y* values. Finally, answer the questions below the table.

2. Mark earned $8 for every hour he worked.

Hours *x*	Process		Earnings (in dollars) *y*
	Add	Multiply	
10			
x			

What is the general rule for this scenario? $y =$ _____

Is the scenario additive or multiplicative? _____

Compare your answers with a partner and discuss your reasoning.

Name: _____

Independent Practice

Read the first scenario. Then, for the first 2 rows of the table, write both possible processes to get from the value in the *x* column to the value in the *y* column. Then, determine which process is consistent between the 2 rows and complete the table by using this process. Finally, answer the questions below the table.

1. A car can travel 60 miles for every 2 gallons of gasoline.

Gallons of gasoline *x*	Process		Miles *y*
	Add	Multiply	
2			60
4			120
6			
8			
12			
x			

What is the general rule for this scenario? $y =$ _____

Is the scenario additive or multiplicative? _____

Independent Practice (cont.)

Read the second scenario. Then, choose your own values for the *x* column of the table and fill in the corresponding processes and *y* values. Finally, answer the questions below the table.

2. Because Mary has been working at the car wash longer than John, she makes 20 dollars more than he does every day.

John's earnings (in dollars) *x*	Process		Mary's earnings (in dollars) *y*
	Add	Multiply	
100			
x			

What is the general rule for this scenario? $y =$ _____

Is the scenario additive or multiplicative? _____

Answer Key: Cumulative Review

1. Determine whether the 2 ratios for each item are proportional by using simplification.

   If they are proportional, write the ratios as a proportion. If they are not proportional, write "not proportional."

   a. $\frac{6}{9}$ and $\frac{10}{15}$ $\quad \frac{6}{9} = \frac{2}{3}$ $\quad \frac{10}{15} = \frac{2}{3}$

   $\frac{6}{9} = \frac{10}{15}$

   b. $\frac{9}{15}$ and $\frac{8}{10}$ $\quad \frac{9}{15} = \frac{3}{5}$ $\quad \frac{8}{10} = \frac{4}{5}$

   $\frac{9}{15}$ and $\frac{8}{10}$ are not proportional.

2. Create an equivalent ratio for the given ratio below by multiplying the top and bottom by a scale factor ($\frac{3}{3}$, $\frac{4}{4}$, etc.).

   Check for equivalence by simplifying both ratios.

   Write the proportion, showing that the 2 ratios are equivalent and, therefore, proportional.

   Answers will vary.

Given Ratio	Scale Factor *(multiply by the same number)*	Equivalent Ratio
$\frac{\text{6 apples}}{\text{9 bananas}}$	$\frac{\text{x 3}}{\text{x 3}}$	$\frac{\text{18 apples}}{\text{27 bananas}}$
Check for equivalence: $\frac{6}{9} = \frac{2}{3}$ $\quad \frac{18}{27} = \frac{2}{3}$		
Write the proportion: $\frac{6}{9} = \frac{18}{27}$		

Answer Key: Practice 1

Read the first scenario. Then, for the first 2 rows of the table, write both possible processes to get from the value in the *x* column to the value in the *y* column. Then, determine which process is consistent between the 2 rows and complete the table by using this process. Finally, answer the questions below the table.

1. There are 6 wheels for every school bus.

School buses *x*	Process		Wheels *y*
	Add	Multiply	
1	1 + 5	6(1)	6
2	2 + 10	6(2)	12
3	6(3)		18
4	6(4)		24
10	6(10)		60
x	6(*x*)		6*x*

What is the general rule for this scenario? $y =$ 6*x*

Is the scenario additive or multiplicative? multiplicative

Answer Key: Practice 1 (cont.)

Read the second scenario. Then, choose your own values for the *x* column of the table and fill in the corresponding processes and *y* values. Finally, answer the questions below the table.

Note: Answers will vary.

2. Susan planted a tree that was 9 inches tall after 1 year. Each year, the tree grew another inch.

Year *x*	Process		Tree height (in inches) *y*
	(Add)	Multiply	
1	1 + 8	9(1)	9
2	2 + 8	5(2)	10
3	3 + 8		11
4	4 + 8		12
10	10 + 8		18
x	*x* + 8		*x* + 8

What is the general rule for this scenario? $y =$ *x* + 8

Is the scenario additive or multiplicative? additive

Compare your answers with a partner and discuss your reasoning.

Answer Key: Practice 2

Read the first scenario. Then, for the first 2 rows of the table, write both possible processes to get from the value in the *x* column to the value in the *y* column. Then, determine which process is consistent between the 2 rows and complete the table by using this process. Finally, answer the questions below the table.

1. The snow was 6 inches deep when Sandra woke up this morning. It continued to snow 1 inch every hour.

Time passed (in hours) *x*	Process		Snowfall (in inches) *y*
	Add	Multiply	
1	1 + 6	7(1)	7
2	2 + 6	4(2)	8
3	3 + 6		9
4	4 + 6		10
10	10 + 6		16
x	*x* + 6		*x* + 6

What is the general rule for this scenario? $y =$ $x + 6$

Is the scenario additive or multiplicative? additive

Answer Key: Practice 2 (cont.)

Read the second scenario. Then, choose your own values for the *x* column of the table and fill in the corresponding processes and *y* values. Finally, answer the questions below the table.

Note: Answers will vary.

2. Mark earned $8 for every hour he worked.

Hours *x*	Process		Earnings (in dollars) *y*
	Add	Multiply	
1	1 + 8	8(1)	8
2	2 + 14	8(2)	16
3	8(3)		24
4	8(4)		32
10	8(10)		80
x	8(*x*)		8*x*

What is the general rule for this scenario? $y =$ 8*x*

Is the scenario additive or multiplicative? multiplicative

Compare your answers with a partner and discuss your reasoning.

Answer Key: Independent Practice

Read the first scenario. Then, for the first 2 rows of the table, write both possible processes to get from the value in the *x* column to the value in the *y* column. Then, determine which process is consistent between the 2 rows and complete the table by using this process. Finally, answer the questions below the table.

1. A car can travel 60 miles for every 2 gallons of gasoline.

Gallons of gasoline *x*	Process		Miles *y*
	Add	Multiply	
2	2 + 58	30(2)	60
4	4 + 116	30(4)	120
6	30(6)		180
8	30(8)		240
12	30(12)		360
x	30(*x*)		30*x*

What is the general rule for this scenario? $y =$ 30*x*

Is the scenario additive or multiplicative? multiplicative

Answer Key: Independent Practice (cont.)

Read the second scenario. Then, choose your own values for the *x* column of the table and fill in the corresponding processes and *y* values. Finally, answer the questions below the table.

Note: Answers will vary.

2. Because Mary has been working at the car wash longer than John, she makes 20 dollars more than he does every day.

John's earnings (in dollars) *x*	Process		Mary's earnings (in dollars) *y*
	(Add)	Multiply	
5	5 + 20	5(5)	25
10	10 + 20	3(10)	30
20	20 + 20		40
25	25 + 20		45
100	100 + 20		120
x	*x* + 20		*x* + 20

What is the general rule for this scenario? $y =$ $x + 20$

Is the scenario additive or multiplicative? additive