Check Your Understanding – Rational Functions

The table below identifies the key concepts from this unit.
1. Check your understanding by completing these questions.
2. Check your answers in the key provided.
3. In the table below, highlight the questions you got correct.
4. Ask peers/Dr. James about concepts where you can improve.

Key Concepts	Mild	Medium	Spicy
Completing a Table of Values	1	2	
Finding the Rule	3	4, 5a, 6a	
Solving for y	5b	6b	
Solving for x	5c	6c	

1. A rational function follows the rule $y = \dfrac{7850}{x}$

Complete the following table of values:

x	y
1	
5	
8	
10	

2. A group of students are going on a field trip. The bus we rent costs a total of $240 for the field trip. The students are going to split the cost of the bus, each paying the same amount. Complete the following table of values and graph the relationship between the number of students (x) and the cost per person (y)

Number of students (x)	Cost per person (y)
8	
12	
16	
20	
24	

3. A rational function is given by the table of values below.   Determine the rule of the function.

x	y
1	32
2	16
4	8
8	4

4. A rational function is given by the table of values below.   Determine the rule of the function.

x	y
4	25
5	20
10	10

5. A rational function is given by the table of values below.

x	y
3	90
5	54
6	45

a. Determine the rule of the function

b. Calculate the value of y when $x = 9$.

c. Calculate the value of x when $y = 2$.

6. Each week, the lottery splits a set amount of money between everyone who purchased a winning ticket. If 6 people purchased a winning ticket, each winner receives $160,000.00.

    a. Write the rational function that corresponds with this scenario.

    b. If 15 people purchased winning tickets, how much would each winner receive?

    c. If each winner received $96,000, how many people purchased winning tickets?

Answer Key

1.

x	y
1	7850
5	1570
8	981.25
10	785

2.

Number of students (x)	Cost per person (y)
8	$30
12	$20
16	$15
20	$12
24	$10

3. $y = \dfrac{32}{x}$

4. $y = \dfrac{100}{x}$

5a. $y = \dfrac{270}{x}$

5b. $y = 30$

5c. $x = 135$

6a. $y = \dfrac{960\,000}{x}$

6b. $y = \$64\,000$

6c. $x = 10 \; people$