



Printable Worksheets from [sofatutor.com](https://www.sofatutor.com)

## From Ratio Tables to Equations

w		b		t	
Water (kg)		Other Bio-materials (kg)		Total Mass (kg)	
36	+	24	+	60	
+3 ↓		+2 ↓		+5 ↓	
39	+	26	+	65	
+3 ↓		+2 ↓		+5 ↓	
42	+	28	+	70	
+3 ↓		+2 ↓		+5 ↓	
45	+	30	+	75	
+3 ↓		+2 ↓		+5 ↓	
48	+	32	+	80	

**3 : 2**

$$\frac{b}{t} = \frac{2}{5}$$
$$\frac{w}{t} = \frac{3}{5}$$
$$w = \frac{3}{5}t$$

- 1 Identify patterns in ratio tables.
- 2 Decide which statements are true given the ratio.
- 3 Writing equations given a ratio table
- 4 Complete the ratio table and find an equation
- 5 Match ratio table to equation
- 6 Given an equation fill out the ratio tables
- + with lots of tips, answer keys, and detailed answer explanations for all of the problems.



The complete package, including all problems, hints, answers, and detailed answer explanations is available for all [sofatutor.com](https://www.sofatutor.com) subscribers.



# Identify patterns in ratio tables.

Drag to match the patterns and the  $x$  to  $y$  ratio to the correct table.

1

$x$  increases by 3

2

$y$  increases by 3

3

$x$  increases by 1

4

$y$  increases by 1

5

$y$  increases by 4

6

$x$  increases by 7

7

$3 : 4$

8

$x$  increases by 4

9

$1 : 7$

10

$4 : 3$

11

$y$  increases by 7

12

$7 : 1$

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**A**

$x$	$y$
8	6
12	9
16	12
20	15

**B**

$x$	$y$
1	7
2	14
3	21
4	28

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**C**

$x$	$y$
24	32
27	36
30	40
33	44

**D**

$x$	$y$
42	6
49	7
56	8
63	9



## Hints for solving these problems

1  
of 6

### Identify patterns in ratio tables.

#### Hint #1

To find the ratio  $x$  to  $y$ , you must first find the *constant increase* for each column.

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#### Hint #2

To identify the *constant increase*, look for a pattern in either the  $x$ - or  $y$ - column. Look at one column at a time. Start from the first number and ask yourself "what number am I adding to get the number below?" Repeat this for the entire column, if this value is the same for each then it is the *constant increase* for that column.

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#### Hint #3

Look at the table below.

$x$	$y$
1	5
2	10
3	15
4	20

- Look at the numbers in the  $x$ -column: 1, 2, 3, 4.
  - Ask yourself what number do can I add to 1 to get to 2? Repeat this for each number in the  $x$ -column:  
 $2 + ? = 3$   
 $3 + ? = 4$
  - If you added the same number each time, then that is the *constant increase* for the  $x$ .
  - Do the same for the  $y$ -column:  
 $5 + ? = 10$   
 $10 + ? = 15$   
 $15 + ? = 20$
  - The number you added every time should have been the same, this is the *constant increase* for  $y$ .
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#### Hint #4

Look at the table below.



## Worksheet: From Ratio Tables to Equations

Mathematics / Middle School / Ratios and Unit Rates / Collections of Equivalent Ratios / From Ratio Tables to Equations

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$x$	$y$
1	5
2	10
3	15
4	20

You can see that the  $x$  increases by 1 and the  $y$  increases by 5, this gives an  $x$  to  $y$  ratio of 1 : 5.

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## Answers and detailed answer explanations for these problems

1  
of 6

### Identify patterns in ratio tables.

**Answer key:** A: 2, 8, 10 // B: 3, 9, 11 // C: 1, 5, 7 // D: 4, 6, 12

First identify the *constant increase* in both the  $x$  and  $y$  column for each table. Then, set up your  $x$  to  $y$  ratio using the *constant increases* you found.

- For the first table, *constant increase* for  $x$  is 4 and for  $y$  is 3. The ratio  $x$  to  $y$  for this table is 4 : 3.
- For the second table, the *constant increase* for  $x$  is 1 and for  $y$  is 7. The ratio  $x$  to  $y$  for this table is 1 : 7.
- For the third table, the *constant increase* for  $x$  is 3 and for  $y$  is 4. The ratio  $x$  to  $y$  for this table is 3 : 4.
- For the fourth table, the *constant increase* for  $x$  is 7 and for  $y$  is 1. The ratio  $x$  to  $y$  for this table is 7 : 1.