

Chapter 26

TABLES AND RATIOS

We can use tables to compare ratios and proportions. For example, Sue runs laps around a track. Her coach records the time below:

NUMBER OF LAPS	TOTAL MINUTES RUN
2	6 minutes
5	15 minutes

What if Sue's coach wanted to find out how long it would take her to run 1 lap? If her speed remains constant, this is easy to calculate because we have already learned how to find unit rate!

We can set up this proportion: $\frac{1}{x} = \frac{2}{6}$

Another option is to set up this proportion: $\frac{1}{x} = \frac{5}{15}$

The answer is 3 minutes.

CAUTION!

We can use tables only if rates are PROPORTIONAL! Otherwise, there is no ratio or proportion to extrapolate from or base our calculations on.



EXAMPLE: Linda and Tim are racing around a track. Their coach records their times below.



Linda

NUMBER OF LAPS	TOTAL MINUTES RUN
1	?
2	8 minutes
6	24 minutes

Tim

NUMBER OF LAPS	TOTAL MINUTES RUN
1	?
3	15 minutes
4	20 minutes

If each runner's speed stays constant, how would their coach find out who runs faster? Their coach must complete the table and find out how much time it would take Tim to run 1 lap and how much time it would take Linda to run 1 lap, and then compare them. The coach can find out the missing times with proportions:

LINDA:

$$\frac{1}{x} = \frac{2}{8}$$

$$x = 4$$

So, it takes Linda 4 minutes to run 1 lap.

TIM:

$$\frac{1}{x} = \frac{3}{15}$$

$$x = 5$$

So, it takes Tim 5 minutes to run 1 lap.

Linda runs faster than Tim!





CHECK YOUR KNOWLEDGE

Nathalie, Patty, Mary, and Mino are picking coconuts. They record their times in the table below. Fill in the missing numbers (assuming their rates are proportional).

1. Nathalie

NUMBER OF COCONUTS	MINUTES
1	
5	30
	48

2. Patty

NUMBER OF COCONUTS	MINUTES
1	
2	14
6	

3. Mary

NUMBER OF COCONUTS	MINUTES
1	
	4
8	16

4. Mino

NUMBER OF COCONUTS	MINUTES
1	
	20
9	36
	40

5. Who picked 1 coconut in the least amount of time?

CHECK YOUR ANSWERS



1. Nathalie

NUMBER OF COCONUTS	MINUTES
1	6
5	30
8	48

2. Patty

NUMBER OF COCONUTS	MINUTES
1	7
2	14
6	42

3. Mary

NUMBER OF COCONUTS	MINUTES
1	2
2	4
8	16

4. Mino

NUMBER OF COCONUTS	MINUTES
1	4
5	20
9	36
10	40

5. Mary picked 1 coconut in the least amount of time: 2 minutes.