

Period & Frequency

Two seemingly simple terms often cause confusion for students because they are very similar. These are *Period* and *Frequency*. The purpose of this sheet is to give you the definitions of these terms and get you comfortable recognizing and converting between them.

	<i>Symbol</i>	<i>Defintion</i>	<i>Units</i>
Period			
Frequency			

Period: 1 min = _____ seconds & 1 second = _____ minutes

Frequency: 1 Hz = _____ rpm & 1 rpm = _____ Hz

$$f = \frac{1}{T} \quad \& \quad T = \frac{1}{f}$$

Fill out the missing numbers in the chart below:

	<i>Period</i>		<i>Frequency</i>	
	<i>seconds</i>	<i>minutes</i>	<i>Hz</i>	<i>RPM</i>
a)	60 s			
b)		2 min		
c)	20 s			
d)		0.25 min		
e)			2 Hz	
f)				2 rpm
g)				180 rpm
h)			10 Hz	
i)		500 min		
j)				4.3 rpm

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Questions

1. For each of the following, tell whether I am giving you a *period (T)* or a *frequency (f)*:
 - a. A car takes 24 seconds to go around a circle once.
 - b. A kid is spun around at 3 revolutions per minute.
 - c. A washing machine is spinning at 45 rpm.
 - d. A cd rotates once every 0.025 seconds.
 - e. A wheel goes around at a rate of 3.5 Hz.

2. A runner does 4 laps around a track in 120 seconds.
 - a. What is the period of the runner in seconds?
 - b. What is the period of the runner in minutes?
 - c. What is the frequency of the runner in Hz?
 - d. What is the frequency of the runner in rpm?

3. What is the frequency of a tire that takes 0.025 seconds to rotate once?

4. What is the period of a record that spins at 33.3 rpm?

5. What is the period of something that rotates at 20 Hz?

6. What is the frequency of a kid walking around in a circle once every 5 minutes?

7. A car takes 330 seconds to make one lap around a track. What is its rpm?

8. A Merry-go-Round rotates 3.5 times every minute. How many seconds does it take to go around once?

Answers: 1. a) *T* b) *f* c) *f* d) *T* e) *f* 2. a) 30 s b) 1/2 min c) 0.033 Hz
 d) 2 rpm 3) 40 Hz 4) 0.03 min 5) 0.05 s 6) 0.2 rpm 7) 0.18 rpm 8) 17.1 s