

Graph Proportional Relationships _ L1-5

A way to determine whether two quantities are proportional is to graph them on a coordinate plane. If the graph is a straight line through the origin, then the two quantities are proportional.

Example 1

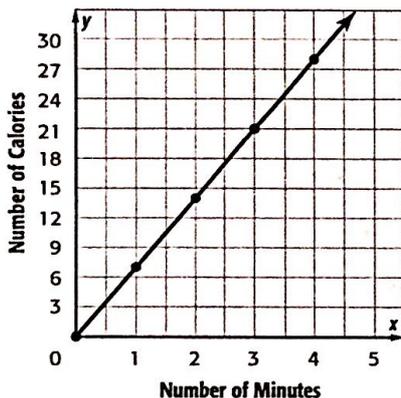
A racquetball player burns 7 Calories a minute. Determine whether the number of Calories burned is proportional to the number of minutes played by graphing on the coordinate plane.

Step 1 Make a table to find the number of Calories burned for 0, 1, 2, 3, and 4 minutes of playing racquetball.

Time (min)	0	1	2	3	4
Calories Burned	0	7	14	21	28

Step 2 Graph the ordered pairs on the coordinate plane. Then connect the ordered pairs.

Calories Burned Per Minute of Racquetball



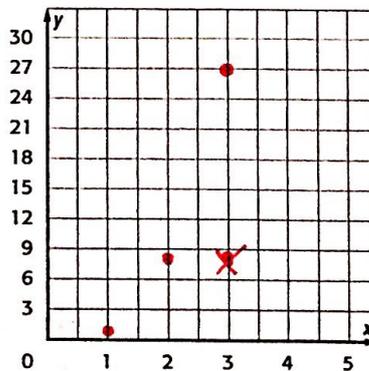
The line passes through the origin and is a straight line. So, the number of calories burned is proportional to the number of minutes of racquetball played.

$origin = (0,0)$

Example 2

Determine whether the relationship between the two quantities shown in each table are proportional by graphing on the coordinate plane.

Volume of a Cube	
Side Length (ft)	Volume (ft ³)
1	1
2	8
3	27



$V = l \cdot w \cdot h$
 $V = 1 \cdot 1 \cdot 1 = 1$
 $V = 2 \cdot 2 \cdot 2 = 8$
 $V = 3 \cdot 3 \cdot 3 = 27$

nonproportional