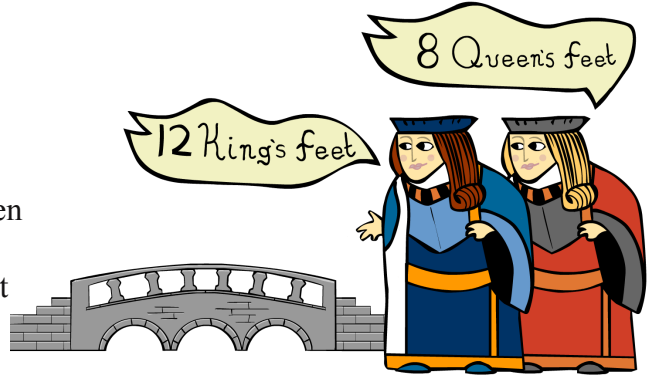


## Overruled! Learner Guide

Watch the video *Overruled!* at <http://matrixlearning.org> and complete these activities.

An instructor guide is available at the Matrix Learning Web site.

1. In the fictional kingdoms of Kingopolis and Queentopia, engineers had to convert King's feet to Queen's feet, and vice versa, to build a bridge between the two countries. They had to know that 2 Queen's feet = 3 King's feet. Fill in the chart and graph so that people in the two kingdoms can easily convert one form of measurement to the other.

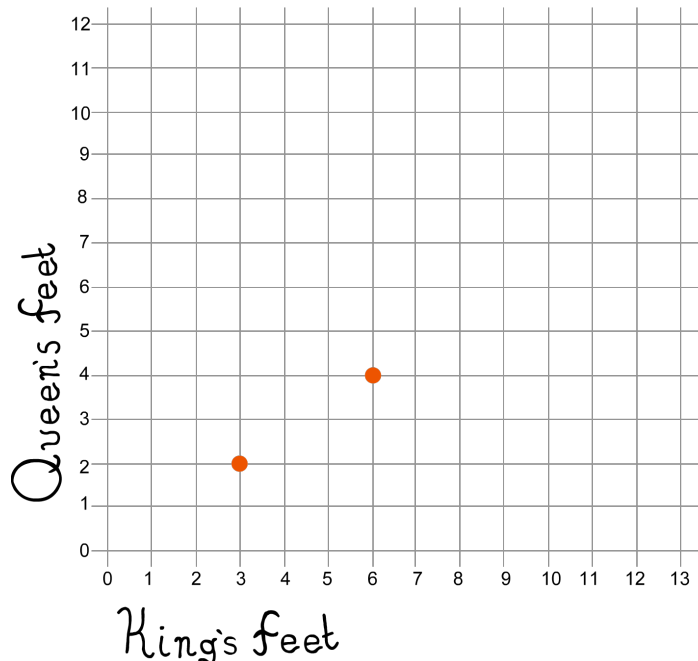
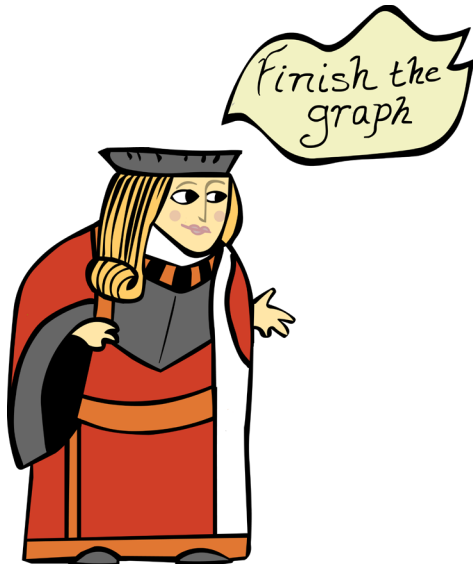


A.

Queen's Feet	King's Feet
1	
2	3
3	
4	6
5	
10	

B.

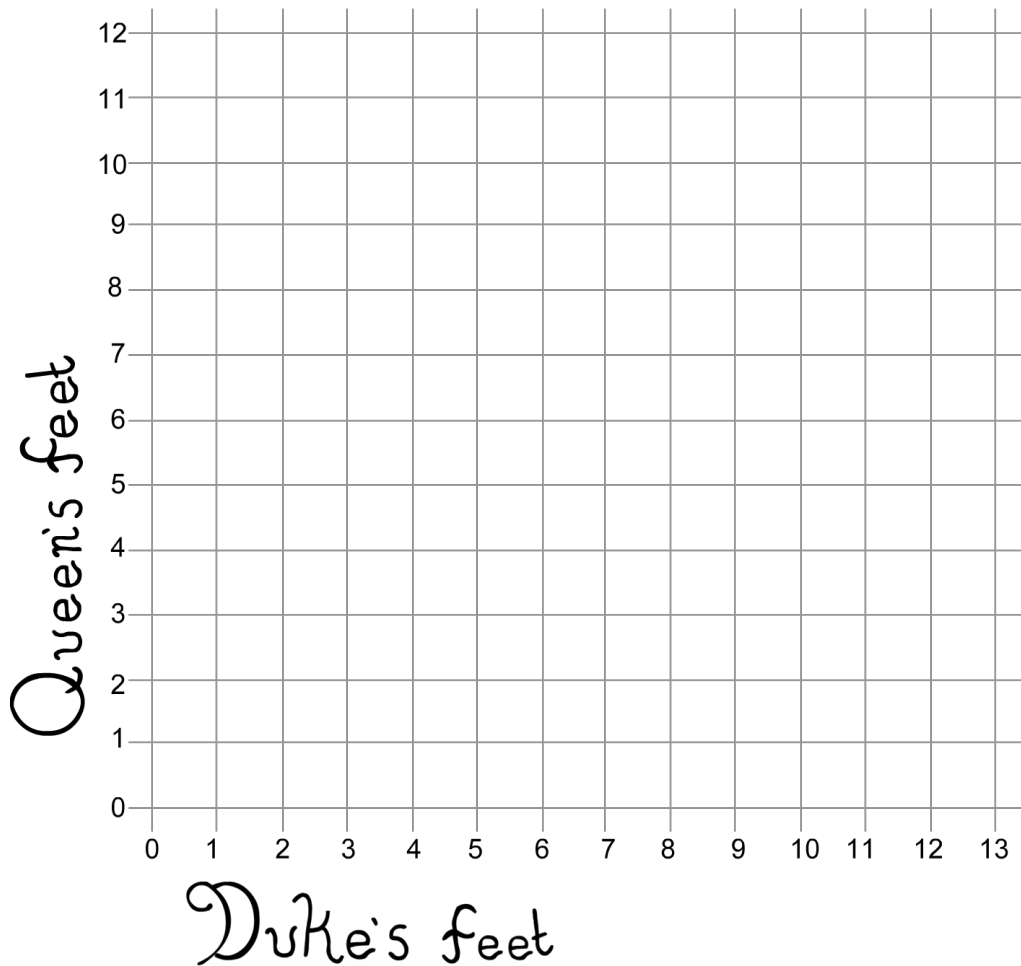
King's Feet	Queen's Feet
1	
2	
3	2
4	
5	
10	



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2. The Duke of Good Arches has very large feet. They are  $1\frac{1}{2}$  times the size of the Queen's feet or, it takes  $1\frac{1}{2}$  Queen's feet to equal one Duke's foot. Using the table below, make a graph that compares Duke's to Queen's feet.

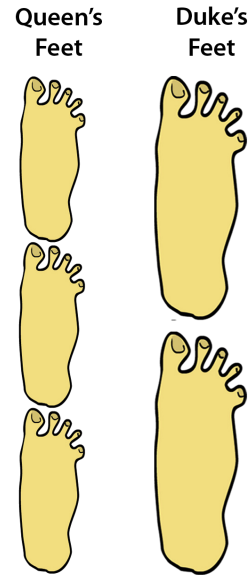
Queen's Feet	Duke's Feet
1.5	1
3	2
4.5	3
9	6
12	8



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3. The Queen decided that she wanted a new royal purple banner to fly over the new bridge. The banner will require 6 Queen's feet of purple silk fabric. By looking at the chart to the right, can you tell how many Duke's feet of silk will be needed for the banner?

6 Queen's feet = \_\_\_\_\_ Duke's feet



4. Joe from New York marries Maria from Italy. After the wedding in Milan, the couple starts to drive to Venice for their honeymoon. After driving for a little while, Joe sees a road sign that says, "Venice -- 200 km." Joe is used to thinking about distance in miles, and he wonders just how far away Venice is in miles. Luckily, Maria has made a table for him so that he can convert the metric distances into miles.

KM	Miles
1	.62
10	6.21
20	12.43
30	18.64
40	24.85
50	31.07
100	62.14
150	93.21
200	124.27

- A. Maria says, "We'll stop for lunch in about 40 kilometers." Use the conversion table to find out for Joe how many miles that is.

\_\_\_\_\_ miles

- B. Joe knows that when he drives in the United States, he has to fill up the gas tank about every 250 miles. Maria looks at the conversion chart. Is it more like

	300 kilometers
	400 kilometers
	500 kilometers

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5. Joe and Maria are back from their honeymoon. Joe wants to impress Maria by baking a cake. They haven't finished unpacking and Joe can only find the measuring spoons and not the measuring cups! He knows that  $\frac{1}{4}$  cup is equal to 4 tablespoons.

A. Can you make a table so that Joe can convert his recipe?

Cups	Tablespoons
$\frac{1}{4}$	4
$\frac{1}{2}$	
$\frac{3}{4}$	
1	

B. Now help him figure out how many tablespoons of ingredients he needs to make the cake.



Joe's Recipe	
<b><math>\frac{1}{4}</math> cup = 4 tbsp</b>	
1 cup of butter	Tbsp butter
1 $\frac{1}{2}$ cups sugar	Tbsp sugar
2 $\frac{1}{2}$ cups of flour	Tbsp flour
$\frac{1}{2}$ cup cocoa	Tbsp cocoa
6 eggs	