



# Overruled!

## Answer Key



Watch the animation, *Overruled!*, and complete these activities. The animation and an instructor guide are available on iTunes U (search "Math Snacks") and at [mathsnacks.org](http://mathsnacks.org)

The official for the kingdom who is in charge of measuring made the following table comparing the number of teacher feet to student feet.

Student	Teacher
3	1
5	2
7	5

### 1A. Is the official doing a good job? Why or why not?

*Answer: No he is not, because... [answers will vary but should relate to the fact that the given proportion 1:2 does not match the proportions given in the left table.]*

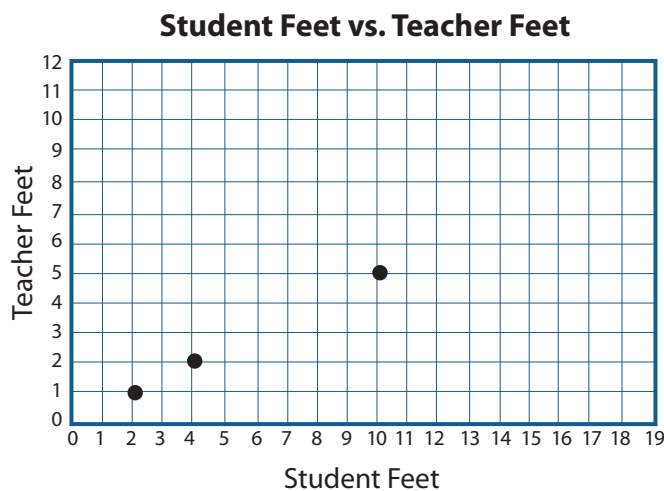
1 Teacher's Foot      2 Student's Feet



### B. If the official was doing his job correctly, what would the table look like?

Student	Teacher
2	1
4	2
10	5

### C. Graph your table of foot measurements below.



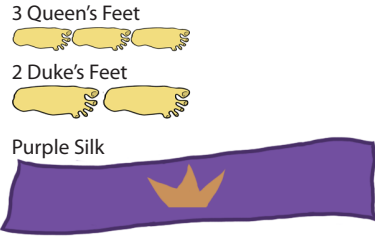
### D. How can you tell if someone is doing a good job of measuring feet?

*Note: Converting 4 queen's feet to duke's feet may be difficult for younger students. There are multiple ways to do this. Students can set up a ratio problem and solve it, students can draw a picture, or students may come up with a new way to make this calculation. If they are confused, it may be valuable to do this in small groups or as a whole class.*

*Answers will vary, but should include some discussion about proportional relationships.*

The queen decided that she wanted a new royal purple banner to fly over the new bridge.

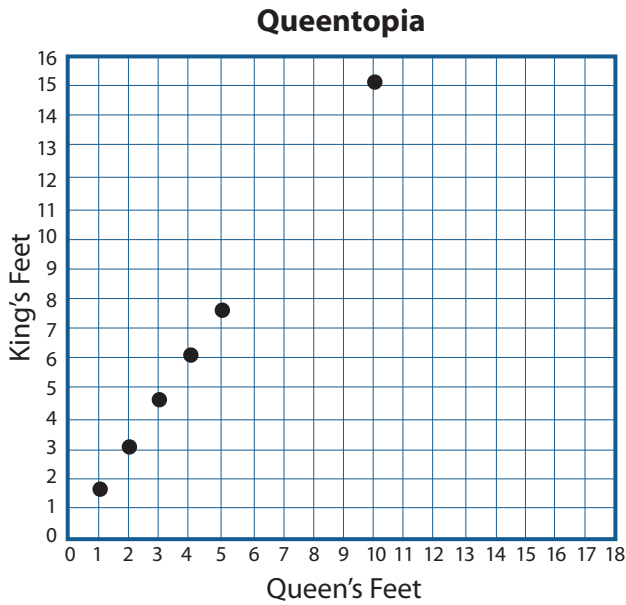
2. The banner will require 6 queen's feet of purple silk fabric. By looking at the chart, can you tell how many duke's feet of silk will be needed for the banner?



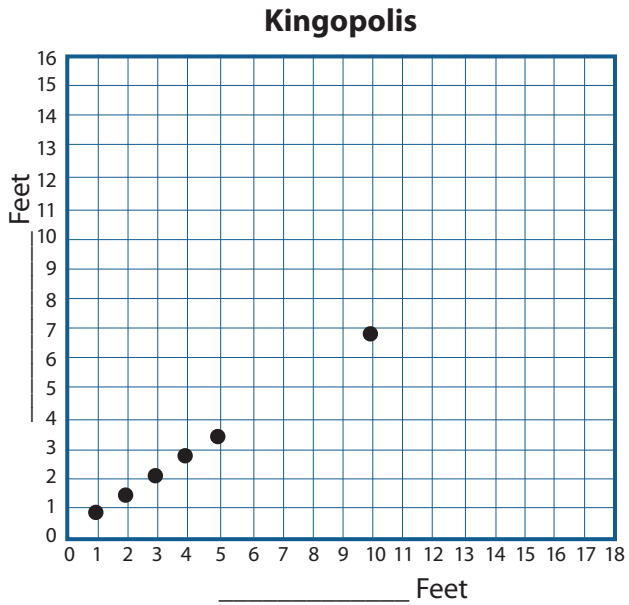
Queen's Feet	Duke's Feet
3	2
4	$8/3, 2\ 2/3, 2.66$
6	4

3. 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 graphs and charts so that people in the two kingdoms can easily convert one form of measurement to the other.

*Note: Converting from king's feet to queen's feet may be difficult for younger students. There are multiple ways to do this. Students can set up a ratio problem and solve it, students can draw a picture, students can use addition by adding 2/3 repeatedly, or students may come up with a new way to make this calculation. If they are confused, it may be valuable to do this in small groups or as a whole class.*



Queen's Feet	A. King's Feet
1	1.5
2	3
3	4.5
4	6
5	7.5
10	15



King's Feet	B. Queen's Feet
1	$2/3$
2	$4/3$
3	2
4	$8/3$
5	$10/3$
10	$20/3$