



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

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.]

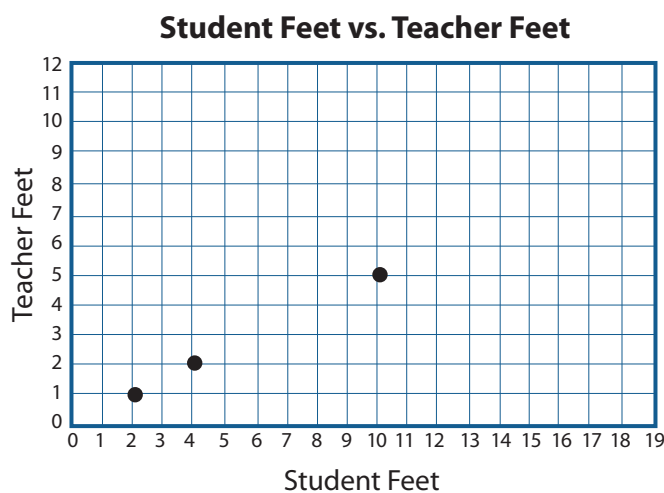
1 Teacher's Foot 2 Student's Feet



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.



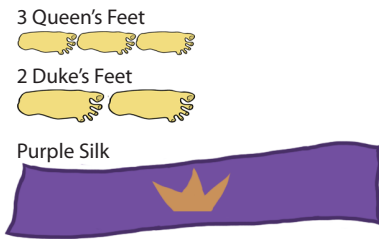
D. How can you tell if someone is doing a good job of measuring feet?

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?

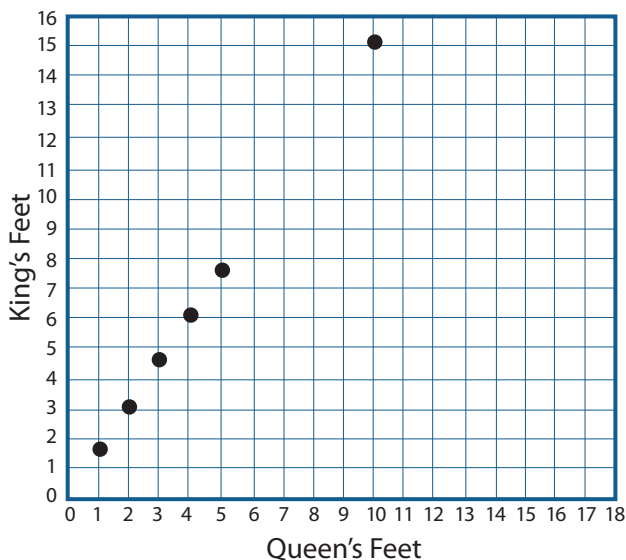


Queen's Feet	Duke's Feet
3	2
4	$8/3, 2\frac{2}{3}, 2.66$
6	4

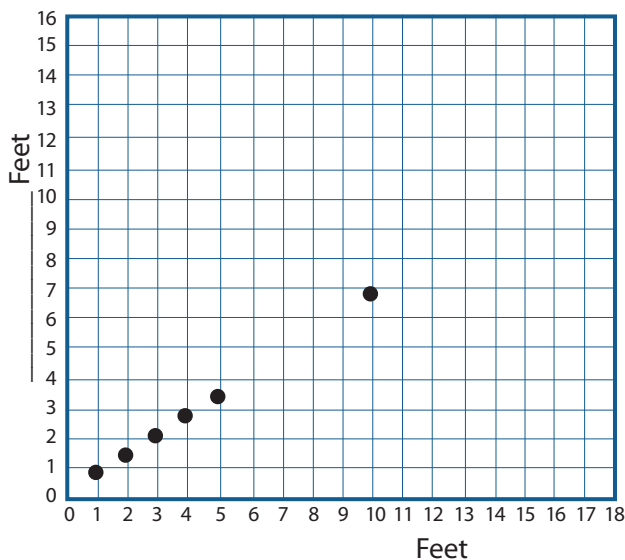
3. In the fictional kingdoms of Kingopolis and Queentopia, engineers had to convert king's feet to queen's feet, and vice versa, to build a bridge between the two countries. They had to know that 2 queen's feet = 3 king's feet. Fill in the graphs and charts so that people in the two kingdoms can easily 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.

Queentopia



Kingopolis



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	$20/3$