Figure 10.16. A sample classroom chart to post using visual and language cues to associate numbers and words when using ratios.

distance in km = distance in cm
80 km = 1 cm
144 km = _____ cm

Figure 10.17. A daily life situation: solving ratio problems with a calculator.

about 144 km, how far apart are the two cities on the map?" Keeping a template of this type of chart makes it easy to adapt to other situations.

As students set up the ratios and proportions, many will recognize they can solve these using what they learned about finding equivalent fractions. Allow any accurate method, like denominators or cross multiplying—whichever the student prefers. In the author's experience, some students actually develop a more solid understanding of proportions if they use the like denominator method.

2. **Proportions are everywhere.** Spend a good deal of time in math discussions and using visuals to elicit ideas for additional charts that involve proportions in everyday life. For example, have students translate situations like the following:

   - To make 12 cookies, the recipe calls for $\frac{1}{2}$ cup of flour. I need 30 cookies, so I'll make a chart to figure out how much flour I need."

   - Have students print a picture from their smartphone or camera and measure the sides. Discuss different ideas for using their picture in a larger size. For example, for an art project have them figure out the proportion required to use that picture for a placemat. To compare ratios and proportions, each student makes a placemat of a different size by drawing a size from a grab bag. Students set up the proportion based on the size of their original printed picture.

3. **Recognize alternatives.** It is important to present alternative methods to help students solve problems. For example, although proportions can be used to compare prices at a grocery store, many times it is more expedient