



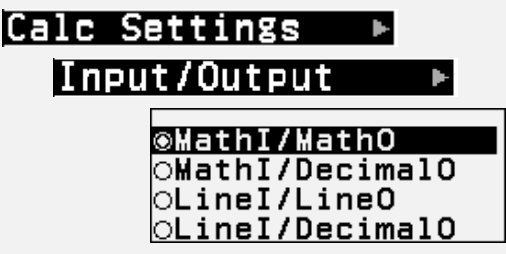
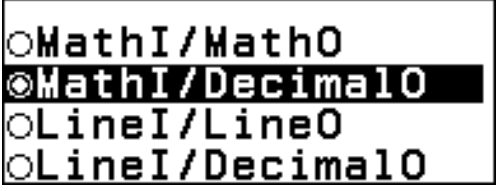
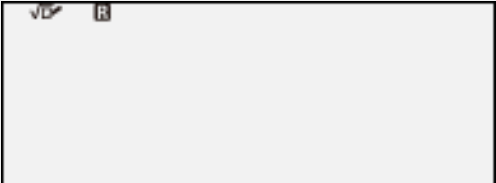
Unit 1: Lesson 12 – Units in Scale Drawings

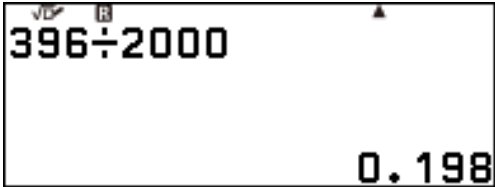
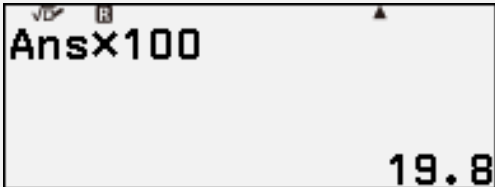
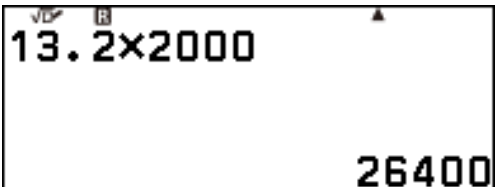
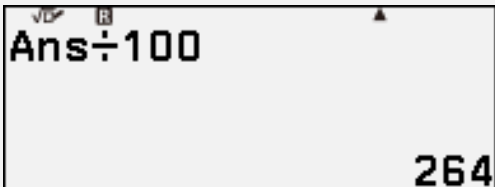

Activity 12.3: The World's Largest Flag

Skill: Solve scale drawing problems using scale factors in the Calculate app.

Activity Summary:

This activity expands on the concept of scale by introducing unitless scales. Students will calculate both scaled and actual distances, emphasizing the importance of precise units and clear reasoning. The activity also revisits the relationship between the area of a scale drawing and the area of the actual object. The Calculate app can be used to convert between scaled values and between different metric units by either multiplying or dividing by the scale factor.

<p>1. Turn on the calculator with the ⏻ - On button. Press ⏻ - Home and then use the arrow keys to highlight the Calculate app.</p>	
<p>2. Press either OK or EXE to open the Calculate app. In this activity, a unitless scale of 1:2000 is given between a smaller flag and the world record sized flag.</p>	
<p>3. To have answers default as decimal output, the calculator must be in MathI/DecimalO mode. To change the setting, press ≡ - Settings then press either ➤, OK, or EXE twice. (The top option, MathI/MathO is the default setting.)</p>	
<p>4. Press the down arrow to highlight the second option, MathI/DecimalO and press either OK or EXE to select.</p>	
<p>5. Press the AC button to return to the Calculate app.</p>	

<p>6. To complete the table, the record flag length of 396 m needs to be divided by 2,000 to find the smaller flag length. The smaller flag is 0.198 meters long.</p>	
<p>7. However, the other values in the table for the smaller flag are in centimeters. To convert this answer to cm, multiply by the conversion factor of 100 cm/m. To use the prior answer as the first value in your next expression, type an operation first. The smaller flag is 19.8 centimeters long.</p>	
<p>8. The next missing value in the table is the actual world record flag height when the smaller flag is 13.2 cm in height. Multiply by the scale factor of 2000. The record flag height is 26,400 cm in height.</p>	
<p>9. Again, the other values in the table for the world record flag are in a different unit, meters. To convert this answer to m, divider by the conversion factor of 100 cm/m. Another way to use the prior answer is using the Answer Key, (Ans), first. The world record flag has a height of 264 meters.</p>	
<p>10. The last value to find is the height of the crescent moon on the small flag. The scale factor and the unit conversion can be combined into one operation. Instead of dividing by 2000 and then multiplying by 100, the answer can be found directly by dividing by 20.</p>	
<p>11. The last part of this activity asks how many times larger the area of the world record flag is compared to the area of the smaller flag. Since each dimension is 2,000 times longer, the answer is 2,000 x 2,000, or 4 million times larger!</p>	