Lesson 7: Multi-step Conversion Problems: Customary Length

- Let's solve multi-step problems about customary length.

Warm-up: Number Talk: Multiples of 12

Find the value of each expression mentally.

- 45×10

- 45×2

- 45×12

- 46×12

7.1: Card Sort: Customary Measurements

1. Your teacher will give you a set of cards that show different measurements. Sort the cards into 2 categories of your choosing. Be prepared to explain the meaning of your categories.

   (Pause for teacher directions.)

2. Match the cards with equal measurements. Then, list the groups of matching measurements in increasing order.

7.2: Run a Mile or Two

1. A rectangular field is 90 yards long and $42\frac{1}{4}$ yards wide. Priya says that 6 laps around the field is more than a mile. Do you agree with Priya? Explain or show your reasoning.
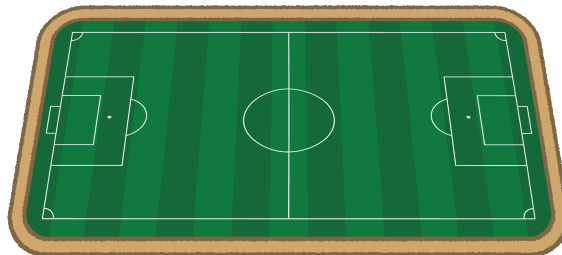
2. A different rectangular field is $408\frac{1}{2}$ feet long and $240\frac{1}{4}$ feet wide. How many laps around this field would Priya need to run if she wants to run at least 2 miles?

Section Summary

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In this section we studied powers of 10 and conversions between units. We learned that we can write a product of 10s like

$$10 \times 10 \times 10 \times 10$$

as 10^4. The number 4 is an exponent and it means that there are 4 factors of 10.

We also converted between different measurement units, mostly metric lengths. For example, there are 1,000 millimeters in a meter and 1,000 meters in a kilometer. This means that there are $1{,}000 \times 1{,}000$ or $1{,}000{,}000$ millimeters in a kilometer. We could also say that there are 10^6 millimeters in a kilometer. We also used our understanding of decimals to make conversions. For example, since there are 1,000 meters in a

kilometer that means that each meter is $\frac{1}{1,000}$ or 0.001 kilometers. So 853 meters can also be written as 0.853 kilometers.