

Homework & Practice 13-1

Equivalence with Customary Units of Length



Be precise and use the correct units.

Another Look!

The longest squid recorded by scientists was $14\frac{1}{3}$ yards long. In 2006, a 24-foot squid was captured. How many feet longer was the longest squid than the captured squid?

Step 1

Convert the length of the longest squid to feet. There are 3 feet in 1 yard.

$$\begin{aligned}
 14\frac{1}{3} \times 3 &= (14 \times 3) + \left(\frac{1}{3} \times 3\right) \\
 &= 42 + \frac{3}{3} \\
 &= 42 + 1 \\
 &= 43
 \end{aligned}$$

$$14\frac{1}{3} \text{ yards} = 43 \text{ feet}$$

Step 2

Find the difference to compare.

$$\begin{array}{r}
 313 \\
 43 \\
 -24 \\
 \hline
 19
 \end{array}$$

The longest squid was 19 feet longer than the captured squid.

For 1–6, convert each unit.

- 25 feet = _____ inches
- 3 miles = _____ feet
- 4 miles = _____ yards
- 57 yards = _____ inches
- $\frac{1}{2}$ yard = _____ inches
- $2\frac{2}{3}$ yards = _____ feet

For 7–8, complete each table.

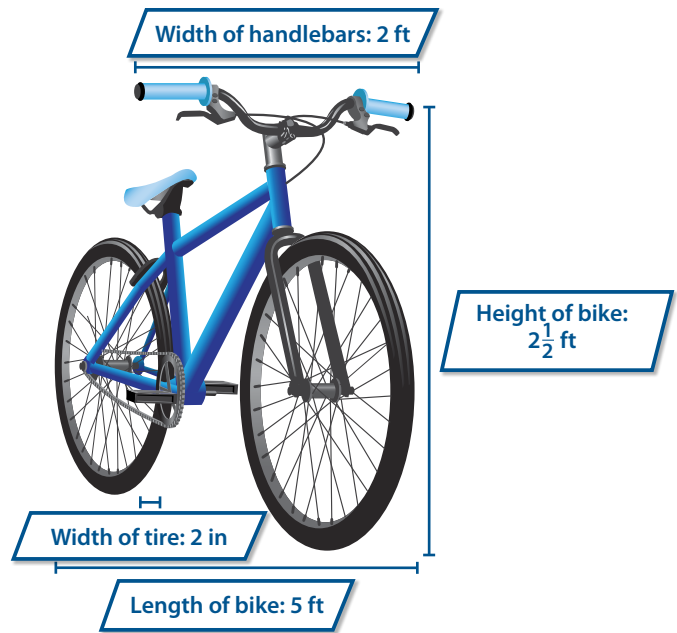
7.

Miles	Feet
$1\frac{1}{2}$	
$2\frac{1}{2}$	
$3\frac{1}{2}$	
$4\frac{1}{2}$	
$5\frac{1}{2}$	
$6\frac{1}{2}$	

8.

Yards	Inches
$1\frac{1}{3}$	
$2\frac{1}{3}$	
$3\frac{1}{3}$	
$4\frac{1}{3}$	
$5\frac{1}{3}$	
$6\frac{1}{3}$	

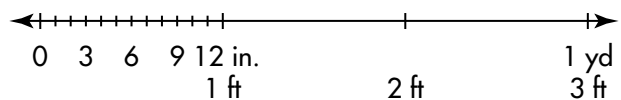
For 9–11, use the picture at the right.



9. © **MP.6 Be Precise** How many times wider are the handlebars of the bike than the width of the tire?
10. What is the length of the bike in inches?
11. © **MP.6 Be Precise** How many more inches is the length of the bike than the height of the bike?

12. © **MP.1 Make Sense and Persevere** Harriet rode her bike $2\frac{1}{4}$ miles to the mall. She then rode $\frac{3}{4}$ mile to the grocery store. She came back the way she went. How many miles did Harriet ride in all? Explain.

13. **Higher Order Thinking** Use the number line. What fraction of 1 foot is 3 inches? What fraction of 1 yard is 3 inches? Explain.



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14. Draw lines to match each measure on the left with its equivalent measure on the right.

$1\frac{1}{3}$ yards	34 inches
4 miles	48 inches
$2\frac{5}{6}$ feet	26 feet
$8\frac{2}{3}$ yard	21,120 feet

15. Three students measured the width of the whiteboard. Reggie got 2, Jackson got 72, and Pete got 6. The teacher said they were all correct. Draw lines to match each student with the unit he was using.

Reggie	Inches
Jackson	Feet
Pete	Yards