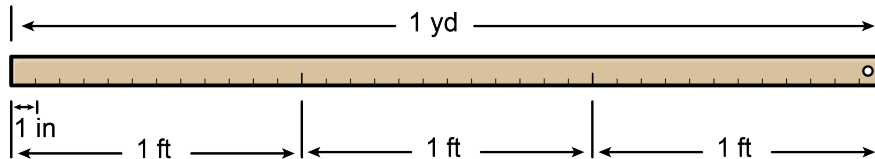


TOPIC: US UNITS OF LENGTH

Conversions: US Length

◆ The US measurement system measures length in **inches**, **feet**, **yards**, and **miles**.

► We can convert from one unit to another by multiplying by a **unit fraction**.



New

Unit Fractions

12 inches (in) = 1 foot (ft)
3 feet (ft) = 1 yard (yd)
5,280 feet (ft) = 1 mile (mi)
1,760 yards (yd) = 1 mile (mi)
(US Length Units)

Unit fraction: ratio of equivalent measures

"per" → $\frac{\text{ft}}{\text{in}} = \frac{\text{in}}{\text{ft}} =$

◆ The unit fraction should have the **new** unit in the _____ & the **original** unit in the _____.

EXAMPLE

Convert the following measurements.

(A) 14 ft = ____ in

(B) 21 ft = ____ yd

TOPIC: US UNITS OF LENGTH

PRACTICE

Fill in the blanks to convert as indicated.

(A) 13,200 ft = ____ mi

(B) 2.5 mi = ____ yd

EXAMPLE

Fill in the blanks to convert as indicated.

(A) 126,720 in = ____ mi

(B) 1.5 mi = ____ in

EXAMPLE

Complete the table by converting the available measurement to the indicated US units. Approximate to three decimal places if needed.

	Miles	Yards	Feet	Inches
Football Field Length		120		
Great Salt Lake Length			396,000	

TOPIC: US UNITS OF LENGTH

EXAMPLE

Perform the following mixed unit conversion.

$$73 \text{ in} = \underline{\hspace{1cm}} \text{ ft } \underline{\hspace{1cm}} \text{ in}$$

EXAMPLE

Convert the following mixed unit measure into a single unit.

$$24 \text{ yd } 5 \text{ ft} = \underline{\hspace{1cm}} \text{ ft}$$

EXAMPLE

A hiking trail is 2.3 miles long. How many feet long is the trail?

TOPIC: US UNITS OF LENGTH

Operations: US Length

◆ Measurements can be added or subtracted *only* if they have _____ units.

► When working with mixed units, **first** perform operations on like units and then _____ if needed.

EXAMPLE

Perform each operation.

(A)

$$\begin{array}{r} 3 \text{ ft } 5 \text{ in} \\ + 9 \text{ ft } 4 \text{ in} \\ \hline \end{array}$$

(B)

$$\begin{array}{r} 10 \text{ yd } 5 \text{ ft} \\ - 2 \text{ yd } 8 \text{ ft} \\ \hline \end{array}$$

(C)

$$\begin{array}{r} 7 \text{ ft } 6 \text{ in} \\ \times 4 \\ \hline \end{array}$$

Note: When borrowing, convert the larger unit to the smaller unit.

TOPIC: US UNITS OF LENGTH

PRACTICE

Perform the indicated operation.

(A) $5 \text{ yd } 2 \text{ ft} + 7 \text{ yd } 1 \text{ ft}$

(B) $21 \text{ yd } 2 \text{ ft} \times 5$

(C) $24 \text{ ft } 3 \text{ in} - 11 \text{ ft } 8 \text{ in}$

(D) $168 \text{ mi} \div 6$

EXAMPLE

Divide as indicated.

$4 \text{ ft } 9 \text{ in} \div 3$