MATH 10 – UNIT 1 – LESSON 3 - IMPERIAL MEASUREMENTS
MEASUREMENT UNIT

Name: _____Key_____

Convert it! *Convert the following measurements:*

a. 5 feet to inches

$$\frac{5\,ft}{1} \times \frac{12\ in.}{1\ ft.} = 60\,in.$$

b. 45 inches to feet

$$\frac{45\,in.}{1} \times \frac{1\ ft.}{12\ in.} = \frac{45}{12}\ ft. = 3\frac{3}{4}\ ft.$$

c. 13 feet to yards

$$\frac{13\,ft}{1} \times \frac{1\ yd.}{3\ ft.} = \frac{13}{3}\,yd = 4\frac{1}{3}\,yd.$$

smaller unit so my # will get bigger!

d. 3 yards to feet

$$\frac{3\,yd}{1} \times \frac{3\ ft}{1\ yd} = 9\,ft$$

e. 3000 yards to miles

$$\frac{3000\,yd.}{1} \times \frac{1\ mi.}{1760\ yd.} = \frac{3000}{1760}\,mi. = 1\frac{1240}{1760}\,mi.$$

$$= 1\frac{31}{44}\,mi$$

f. 2 ½ feet to inches

$$3\frac{9}{12}\ ft$$

$$2\frac{1}{2}\,ft = \frac{5\,ft}{2} \times \frac{12\ in.}{1\ ft.} = \boxed{30\,in.}$$

g. 3 ¾ mile to yards

$$3\frac{3}{4}\,mi. = \frac{15\,mi}{4} \times \frac{1760\,yd.}{1\ mi.}$$

$$= 15 \times 440\,yd. = \boxed{6600\,yd.}$$

$$\begin{array}{r} 440 \\ 4\,\overline{)1760} \\ 16\downarrow \\ \overline{16} \\ 16\downarrow \\ \overline{00} \\ 0 \\ \overline{0} \end{array}$$

h. 50 inches to feet and inches

✦ Start with largest unit (feet)

$$50\,in. \times \frac{1\ ft.}{12\ in.} = \frac{50}{12}\,ft = 4\frac{2}{12}\,ft.$$

$$\frac{2}{12}\,ft. \times \frac{12\ in.}{1\ ft.} = 2\,in.$$

Solve it! Alan is building a fence around his property. The perimeter of the property is 2852 feet.

1. What will be the perimeter of the property in yards and feet? Final answer 950 yd 2 ft.

✦ Start with the largest unit (yards)

$$\frac{2852\,ft.}{1} \times \frac{1\ yd.}{3\ ft.} = 950\frac{2}{3}\,yd.$$

$$\frac{2\,yd.}{3} \times \frac{3\ ft.}{1\ yd.} = 2\,ft.$$

$$\begin{array}{r} 950 \\ 3\,\overline{)2852.0} \\ 27\downarrow \\ \overline{15} \\ 15\downarrow \\ \overline{020} \end{array}$$

2. The fencing material is sold by the foot. It costs $1.50/ft. What will be the cost of material before taxes?

$$\frac{\$1.50}{ft.} \times 2852\,ft. = \boxed{\$4278}$$

Final answer 4 ft. 2 in.

Scale it! A map of Atlantis has a scale of 1: 760 320. The distance on the map between Hero's Town and Victoryville is 2 ½ in. What is the distance between these two towns to the nearest mile?

① Find inches in real life!

$$2\frac{1}{2} \times 760\,320$$

$$= \frac{5}{2} \times 760\,320\overset{380\,160}{} = 1\,900\,800\,in.$$

② Convert to miles

$$1\,900\,800\,in. \times \frac{1\ yd.}{36\ in.} \times \frac{1\ mi.}{1760\ yd.}$$

$$= \frac{1\,900\,800}{36 \times 1760}\,mi.$$

$$= 1\,900\,800 \div (36 \times 1760)\,mi.$$

$$= \boxed{30\,mi.}$$

Lesson 3 Homework: WS 10-1-3 "Imperial Measures"

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Hero's 2 ½ in. Victoryville