Get Ready for Unit 3

Learning Goal: By the end of today I will be able to convert in imperial and metric units and between as well as square units.

CONVERSION

To convert between units use your conversion sheet as follows. Whenever 1 of something equals a number you multiply to get the amount of the units. Going the opposite way, you divide. Another way to think of it is when you are going from a larger unit to a smaller one, you multiply and when you go from the smaller unit to the larger one, you divide.

$$\frac{1\text{ m}}{100\text{ cm}} = \frac{x}{250\text{ cm}}$$

$$250 = 100x$$

$$\frac{250}{100} = x \checkmark$$

For example:

250cm = 2.5 m

On the conversion sheet 100cm = 1 m. In this question we are going from cm to m. so we are going to divide they number by 100 which gives us

250 cm = 2.5 m

Try the top 2 sets of questions on the handout

$4m = 400\,cm$

$5\,cm = 50\,mm$

Method 2

$\frac{1\,m}{100\,cm} = \frac{4\,m}{x}$

$\frac{1\,cm}{10\,mm} = \frac{5}{x}$

$5 \times 10 = x$

Method 1

$1\,m = 100\,cm$

$\times$

$1\,cm = 10\,mm$

$\times$

To convert between square units there is an extra step. First you must square the conversion rule itself and then apply your multiplication or division. For example:
3 sq. inches = _____ mm^2
First, look at the conversion sheet and see that 1 inch = 25.4 mm.
Now square both sides of the conversion:
$1^2 = 25.4^2$
1 =645.16
1 sq. inches = 645.16 mm^2
Next, apply the conversion to the question. Since we are going from sq. inches to mm^2 we are going to multiply by 645.16.
3 × 645.16 = 1935.48
Therefore: 3 sq. inches = 1935.48mm^2
Examples: round to nearest whole number on imperial units
4563 mm^2 = _____sq. inches (2.35 = about 2)
6754cm^2 = _____ sq. ft. (7.2 or 7)
5 sq miles = _____km^2 (12.9 or 13)

Try the questions on the bottom of the handout

$32\,m^2 = 320000\ cm^2$

$1\,m = 100\,cm$ Sq. Rule

$1\,m^2 = 10000\,cm^2$

$\times$

$4546\,cm^2 = 0.4546\,m^2$ *

$1\,m = 100\,cm$ $\frac{1\,m^2}{10000\,cm^2} = \frac{x}{4546\,cm^2}$

$1\,m^2 = 10000\,cm^2$

$\div$

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678 456.4 cm = 6.784564 km

÷

1 m = 100 cm ≠ $\frac{1\text{ m}}{100\text{ cm}} = \frac{x}{678\,456.4}$

1 km = 1000 m

÷

$\frac{1\text{ km}}{1000\text{ m}} = \frac{x}{?}$

4356 yds = 2.475 miles

1 mile = 1760 yds

÷

$\frac{1\text{ mile}}{1760\text{ yds}} = \frac{x}{4356}$

$4356 = 1760x$

$\frac{4356}{1760} = x$

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