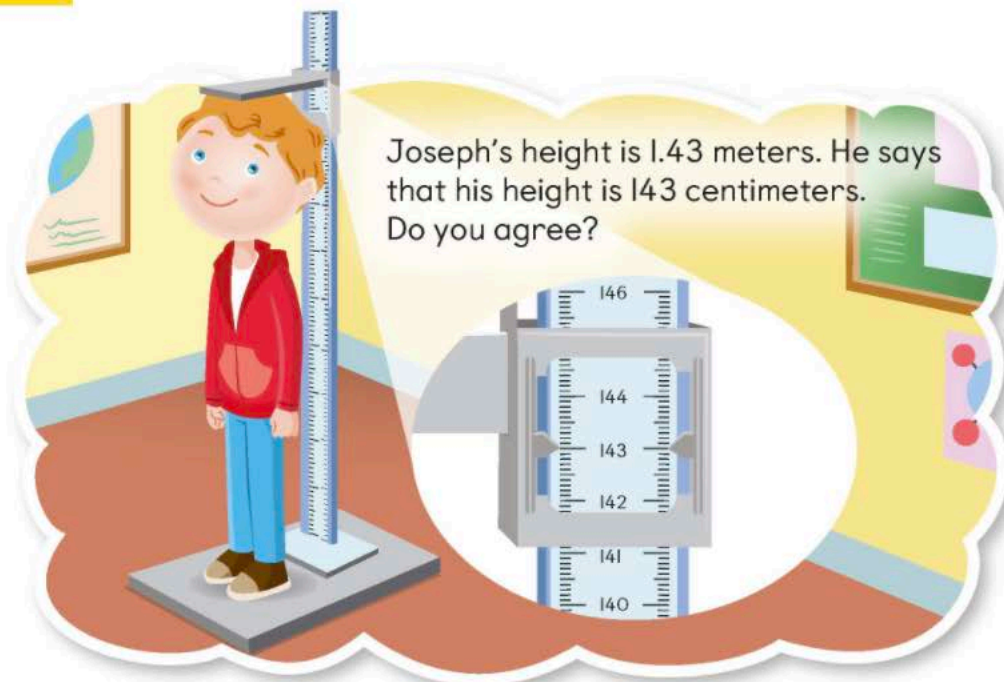


7D Conversion of Measurement Units



Learn

Express 1.43 meters in centimeters.

Method 1

$$\begin{aligned}
 1.43 \text{ m} &= 1 \text{ m} + 0.43 \text{ m} \\
 &= 100 \text{ cm} + \underline{\hspace{2cm}} \text{ cm} \\
 &= \underline{\hspace{2cm}} \text{ cm}
 \end{aligned}$$

$$\begin{aligned}
 1 \text{ m} &= 100 \text{ cm} \\
 0.43 \text{ m} &= 0.43 \times 100 \text{ cm} \\
 &= 43 \text{ cm}
 \end{aligned}$$



Method 2

$$\begin{aligned}
 1.43 \text{ m} &= 1.43 \times \underline{\hspace{2cm}} \text{ cm} \\
 &= \underline{\hspace{2cm}} \text{ cm}
 \end{aligned}$$

Joseph's height is _____ centimeters.

Learn Together

1. Express 3.5 kilograms in grams.

Method 1

$$\begin{aligned} 3.5 \text{ kg} &= 3 \text{ kg} + \text{_____ kg} \\ &= \text{_____ g} + \text{_____ g} \\ &= \text{_____ g} \end{aligned}$$

$$1 \text{ kg} = 1,000 \text{ g}$$

$$\begin{aligned} 0.5 \text{ kg} &= 0.5 \times \text{_____ g} \\ &= \text{_____ g} \end{aligned}$$



Method 2

$$\begin{aligned} 3.5 \text{ kg} &= 3.5 \times \text{_____ g} \\ &= \text{_____ g} \end{aligned}$$

2. Express 4.06 liters in milliliters.

$$\begin{aligned} 4.06 \text{ L} &= 4.06 \times \text{_____ mL} \\ &= \text{_____ mL} \end{aligned}$$

$$1 \text{ L} = 1,000 \text{ mL}$$



What is 4.06 liters
in liters and milliliters?

To convert from a larger unit to a smaller unit, multiply.

1 meter = 100 centimeters

1 kilometer = 1,000 meters

1 kilogram = 1,000 grams

1 liter = 1,000 milliliters

Chapter Practice

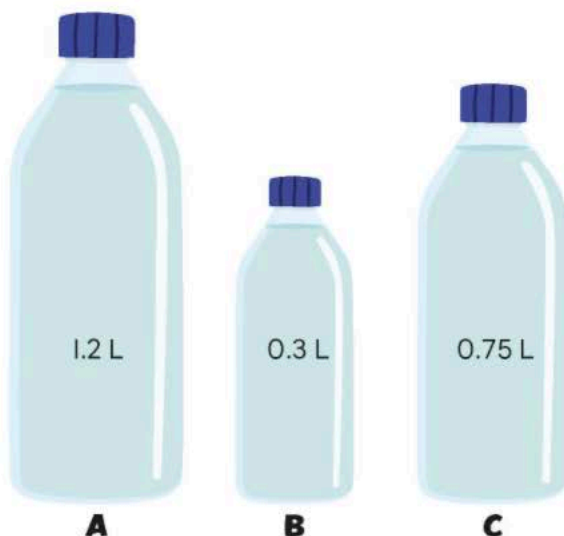
1. Which of the following statements is correct?

- (A) The value of the digit 2 in 32.489 is 0.1 times the value of the digit 2 in 14.25.
- (B) The value of the digit 2 in 32.489 is 10 times the value of the digit 2 in 14.25.
- (C) The value of the digit 2 in 32.489 is 0.01 times the value of the digit 2 in 14.25.
- (D) The value of the digit 2 in 32.489 is 100 times the value of the digit 2 in 14.25.

2. Which expressions are equal to 3.45×0.1 ?
Choose the **two** correct answers.

- (A) $3.45 \times \frac{1}{10}$
- (B) 3.45×0.01
- (C) 34.5×0.01
- (D) 34.5×10
- (E) 0.345×100

Solve! Heuristics: Use Before-After Concept



Alex had three bottles of water.

He poured half the amount of water from Bottle A into Bottle B.

He then poured 0.12 liter of water from Bottle B into Bottle C.

Lastly, he poured 0.4 liter of water from Bottle C into Bottle A.

What was the amount of water in Bottle A in the end?

Step 1

Understand

What do I know from the problem?
How much water is there in each bottle at first?
What did Alex do?
What do the decimals represent?
What do I have to find?



Step 2

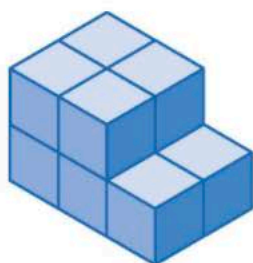
Plan

I can show the **Before-After** situations at each step.



4. Fill in the blanks.

(a)



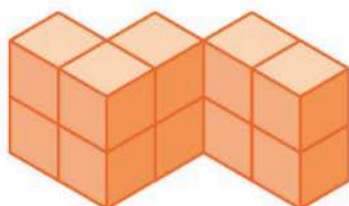
D

Solid D is made up of

_____ unit cubes.

Its volume is _____ cubic units.

(b)



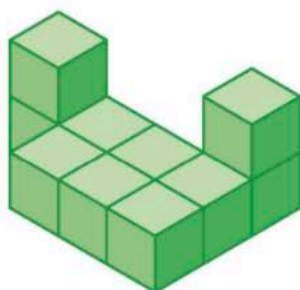
E

Solid E is made up of

_____ unit cubes.

Its volume is _____ cubic units.

(c)



F

Solid F is made up of

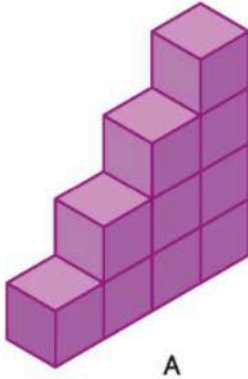
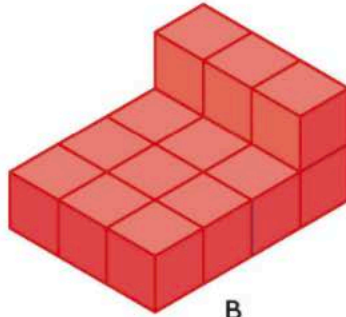
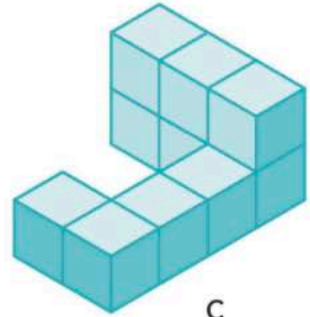
_____ unit cubes.

Its volume is _____ cubic units.

Different solids can have the same volume.

Practice On Your Own

I. Fill in the blanks.

**A****B****C**

(a) Solid A is made up of _____ unit cubes.

Its volume is _____ cubic units.

(b) Solid B is made up of _____ unit cubes.

Its volume is _____ cubic units.

(c) Solid C is made up of _____ unit cubes.

Its volume is _____ cubic units.

(d) Solids _____ and _____ have the same volume.