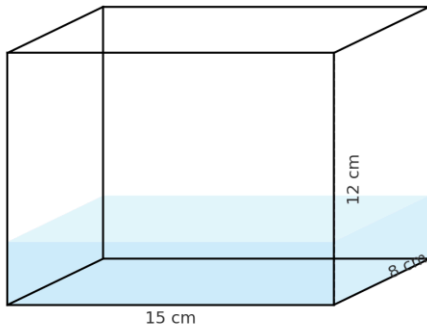


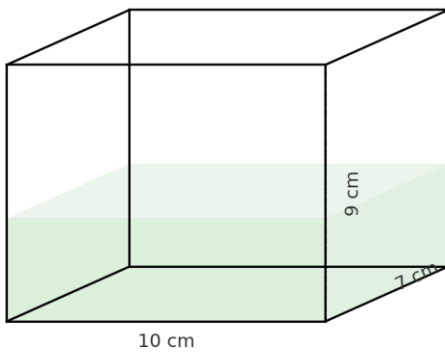
Q1. A sealed cuboid measures $15\text{ cm} \times 8\text{ cm} \times 12\text{ cm}$ and contains $V = 360\text{ cm}^3$ of water.

- a) Write the depth of the water as a fraction of the container's height (simplest form).
- b) Show that the fraction stays the same when the container is tipped onto a side face.



Q2. A sealed cuboid measures $10\text{ cm} \times 7\text{ cm} \times 9\text{ cm}$ and contains $V = 252\text{ cm}^3$ of water.

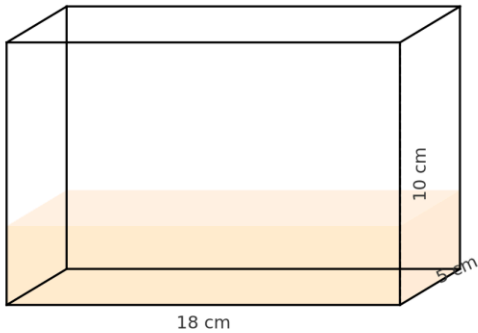
- a) Write the depth of the water as a fraction of the container's height (simplest form).
- b) Show that the fraction stays the same when the container is tipped onto a side face.



Maths with Melissa

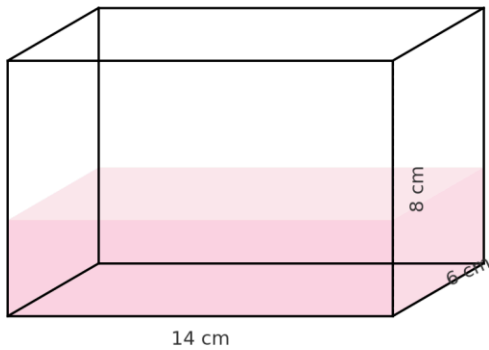
Q3. A sealed cuboid measures $18\text{ cm} \times 5\text{ cm} \times 10\text{ cm}$ and contains $V = 270\text{ cm}^3$ of water.

- a) Write the depth of the water as a fraction of the container's height (simplest form).
- b) Show that the fraction stays the same when the container is tipped onto a side face.



Q4. A sealed cuboid measures $14\text{ cm} \times 6\text{ cm} \times 8\text{ cm}$ and contains $V = 252\text{ cm}^3$ of water.

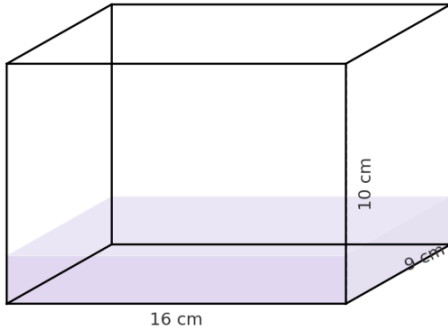
- a) Write the depth of the water as a fraction of the container's height (simplest form).
- b) Show that the fraction stays the same when the container is tipped onto a side face.



Maths with Melissa

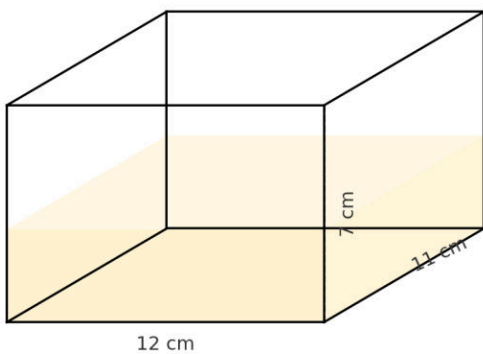
Q5. A sealed cuboid measures $16\text{ cm} \times 9\text{ cm} \times 10\text{ cm}$ and contains $V = 288\text{ cm}^3$ of water.

- a) Write the depth of the water as a fraction of the container's height (simplest form).
- b) Show that the fraction stays the same when the container is tipped onto a side face.



Q6. A sealed cuboid measures $12\text{ cm} \times 11\text{ cm} \times 7\text{ cm}$ and contains $V = 396\text{ cm}^3$ of water.

- a) Write the depth of the water as a fraction of the container's height (simplest form).
- b) Show that the fraction stays the same when the container is tipped onto a side face.



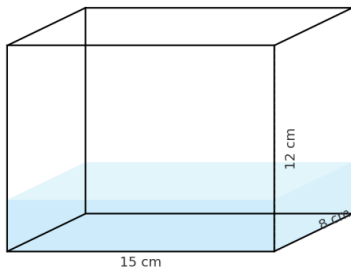
Dimensions: $15\text{ cm} \times 8\text{ cm} \times 12\text{ cm}$; volume of water $V = 360\text{ cm}^3$.

(a) Base area = $15 \times 8 = 120\text{ cm}^2$.

Depth = $V \div \text{base area} = 360 \div 120 = 3.0\text{ cm}$.

Fraction of height = $\text{depth} \div \text{height} = 3.0 \div 12 = 1/4$ (simplest form).

(b) When tipped, fraction = $V \div (L \times W \times H) = 360 / (15 \times 8 \times 12) = 1/4$, so it is unchanged.



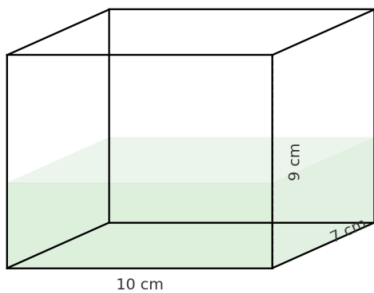
Dimensions: $10\text{ cm} \times 7\text{ cm} \times 9\text{ cm}$; volume of water $V = 252\text{ cm}^3$.

(a) Base area = $10 \times 7 = 70\text{ cm}^2$.

Depth = $V \div \text{base area} = 252 \div 70 = 3.6\text{ cm}$.

Fraction of height = $\text{depth} \div \text{height} = 3.6 \div 9 = 2/5$ (simplest form).

(b) When tipped, fraction = $V \div (L \times W \times H) = 252 / (10 \times 7 \times 9) = 2/5$, so it is unchanged.



Maths with Melissa

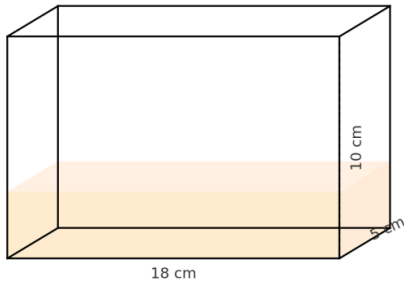
Dimensions: $18\text{ cm} \times 5\text{ cm} \times 10\text{ cm}$; volume of water $V = 270\text{ cm}^3$.

(a) Base area = $18 \times 5 = 90\text{ cm}^2$.

Depth = $V \div \text{base area} = 270 \div 90 = 3.0\text{ cm}$.

Fraction of height = $\text{depth} \div \text{height} = 3.0 \div 10 = 3/10$ (simplest form).

(b) When tipped, fraction = $V \div (L \times W \times H) = 270 / (18 \times 5 \times 10) = 3/10$, so it is unchanged.



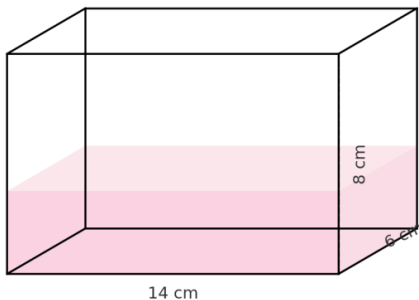
Dimensions: $14\text{ cm} \times 6\text{ cm} \times 8\text{ cm}$; volume of water $V = 252\text{ cm}^3$.

(a) Base area = $14 \times 6 = 84\text{ cm}^2$.

Depth = $V \div \text{base area} = 252 \div 84 = 3.0\text{ cm}$.

Fraction of height = $\text{depth} \div \text{height} = 3.0 \div 8 = 3/8$ (simplest form).

(b) When tipped, fraction = $V \div (L \times W \times H) = 252 / (14 \times 6 \times 8) = 3/8$, so it is unchanged.



Maths with Melissa

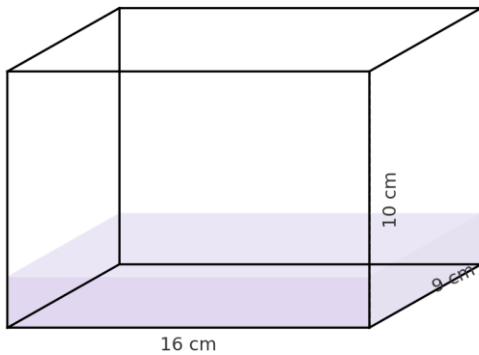
Dimensions: $16 \text{ cm} \times 9 \text{ cm} \times 10 \text{ cm}$; volume of water $V = 288 \text{ cm}^3$.

(a) Base area = $16 \times 9 = 144 \text{ cm}^2$.

Depth = $V \div \text{base area} = 288 \div 144 = 2.0 \text{ cm}$.

Fraction of height = $\text{depth} \div \text{height} = 2.0 \div 10 = 1/5$ (simplest form).

(b) When tipped, fraction = $V \div (L \times W \times H) = 288 / (16 \times 9 \times 10) = 1/5$, so it is unchanged.



Dimensions: $12 \text{ cm} \times 11 \text{ cm} \times 7 \text{ cm}$; volume of water $V = 396 \text{ cm}^3$.

a) Base area = $12 \times 11 = 132 \text{ cm}^2$.

Depth = $V \div \text{base area} = 396 \div 132 = 3.0 \text{ cm}$.

Fraction of height = $\text{depth} \div \text{height} = 3.0 \div 7 = 3/7$ (simplest form).

(b) When tipped, fraction = $V \div (L \times W \times H) = 396 / (12 \times 11 \times 7) = 3/7$, so it is unchanged.

