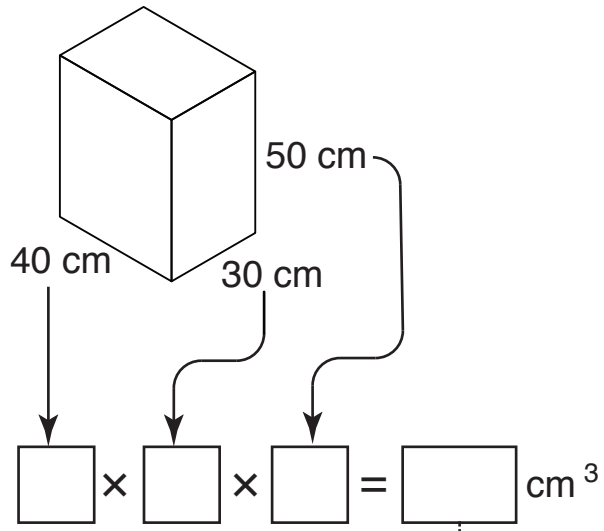
Contents of Sample Version: Problem Solving Solved

8.2 Volume and transferring introduction 1

F/H

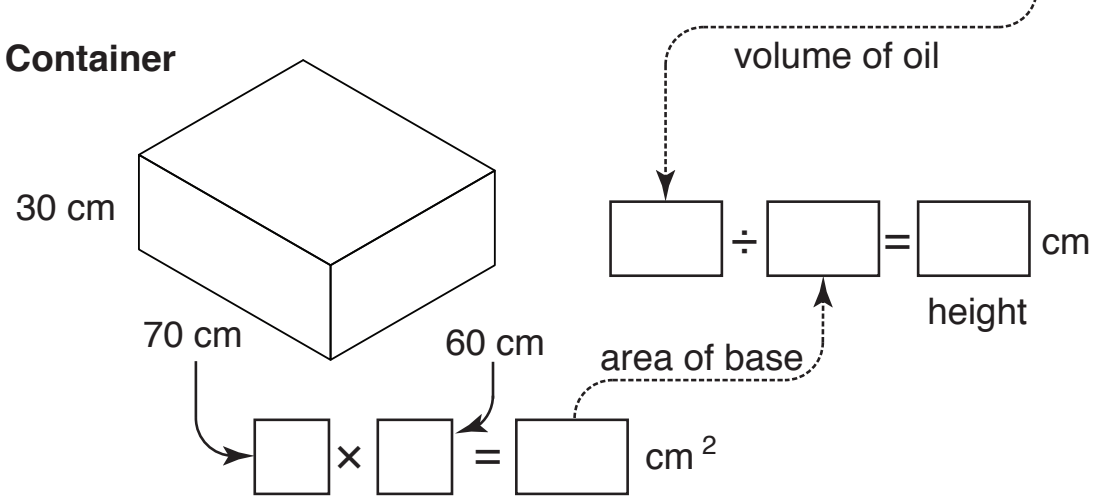
1a The diagram shows a **tank** in the shape of a **cuboid**.
The tank is full of oil.
Calculate the **volume** of the tank.

Tank



1b The diagram shows an **empty** container in the shape of a **cuboid**.
The oil from the tank is put into the container.
Work out the **height** of the oil in the container.

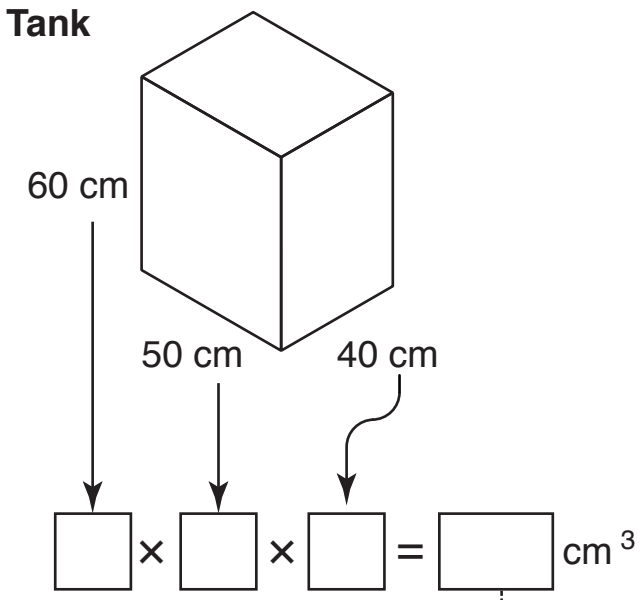
Container



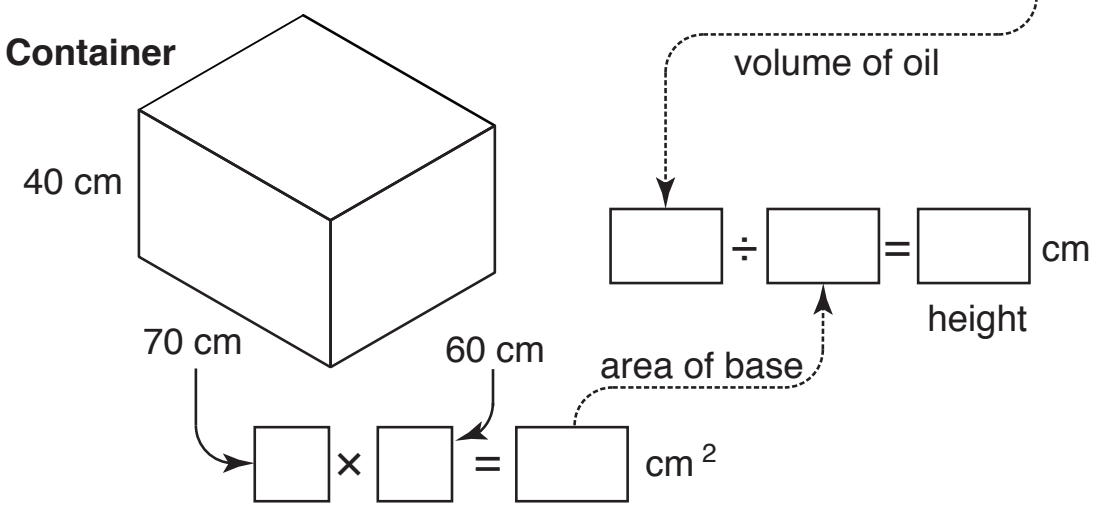
8.2 Volume and transferring introduction 2

F/H

1a The diagram shows a **tank** in the shape of a **cuboid**.
The tank is full of oil.
Calculate the **volume** of the tank.



1b The diagram shows a container in the shape of a **cuboid**.
The container is empty.
The oil from the tank is put into the container.
Work out the **height** of the oil in the container.

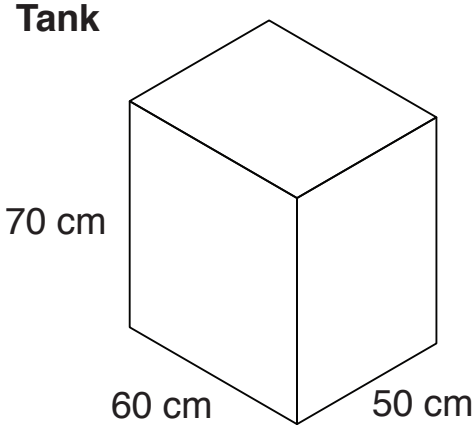


8.2 Volume and transferring introduction: test

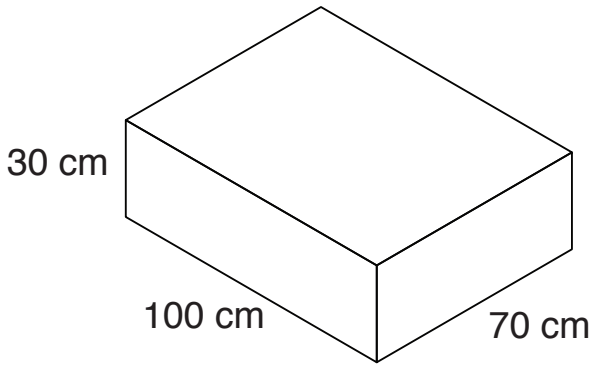
F/H

1 The diagram shows a tank in the shape of a cuboid.
It also shows a container in the shape of a cuboid.

Tank



Container



The tank is full of oil.
The container is empty.

The oil from the tank is put into the container.

Work out the height of the oil in the container.
Give your answer to one decimal place.

Answer _____

8.2 Volume and transferring introduction: answers

F/H

8.2 Volume and transferring introduction 1

1a 40 cm × 30 cm × 50 cm = 60 000 cm^3

1b Area of the base: 70 × 60 = 4200 cm^2

Height : 60 000 ÷ 4200 = 14.3 cm

8.2 Volume and transferring introduction 2

1a 60 cm × 50 cm × 40 cm = 120 000 cm^3

1b Area of the base: 70 × 60 = 4200 cm^2

Height: 120 000 ÷ 4200 = 28.6 cm

8.2 Volume and transferring introduction: Test

1 Volume of the tank:
70 cm × 60 cm × 50 cm = 210 000 cm^3

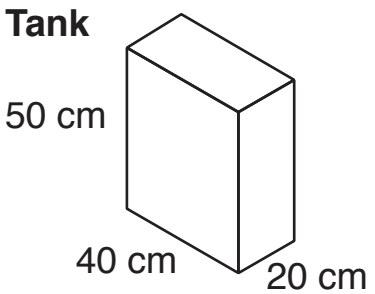
Area of the base of the container:
100 × 70 = 7 000 cm^2

Height of the oil in the container:
210 000 ÷ 7 000 cm = 30 cm

8.3 Volume and transferring next steps 1

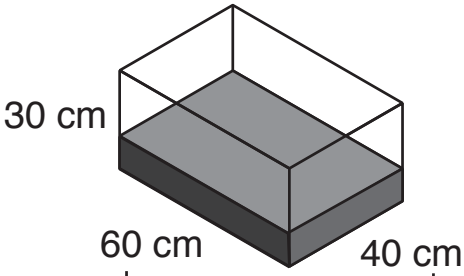
F/H

1a The diagram shows a **tank** in the shape of a **cuboid**.
The tank is full of oil.
Calculate the **volume** of the tank.



□ × □ × □ = □ cm ^{3}

1b The diagram shows a **container** in the shape of a **cuboid**.
There is **24 000 cm^3** of oil in the container.
Work out the height of the oil in the container.



24 000 cm ^{3} ÷ □ = □ height cm

□ × □ = □ cm ^{2}

area of base

1c The oil from the tank is put into the container.
What is the height of oil now in the container?

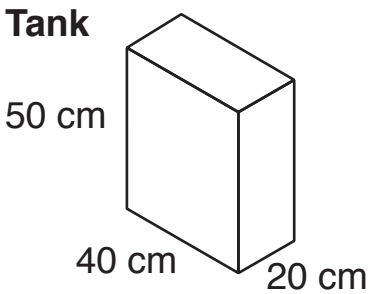
□ ÷ □ = □ cm

Answer □ cm

8.3 Volume and transferring next steps 2

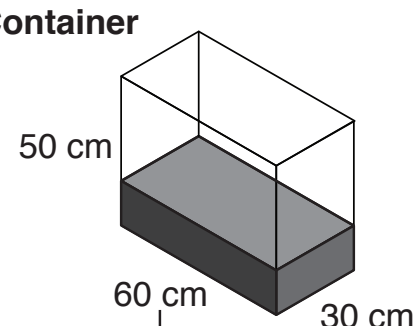
F/H

1a The diagram shows a **tank** in the shape of a **cuboid**.
The tank is full of oil.
Calculate the **volume** of the tank.



□ × □ × □ = □ cm ^{3}

1b The diagram shows a **container** in the shape of a **cuboid**.
There is **36 000 cm³** of oil in the container.
Work out the height of the oil in the container.



□ × □ = □ cm ^{2}
area of base

36 000 cm ^{3} ÷ □ = □ height cm

+

1c The oil from the tank is put into the container.
What is the height of oil now in the container?

□ ÷ □ = □ cm

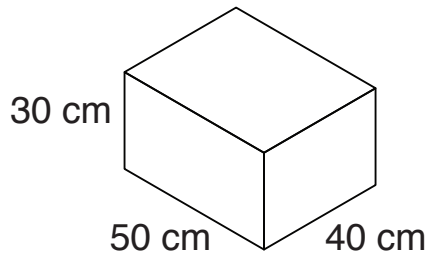
Answer □ cm

8.3 Volume and transferring next steps: test

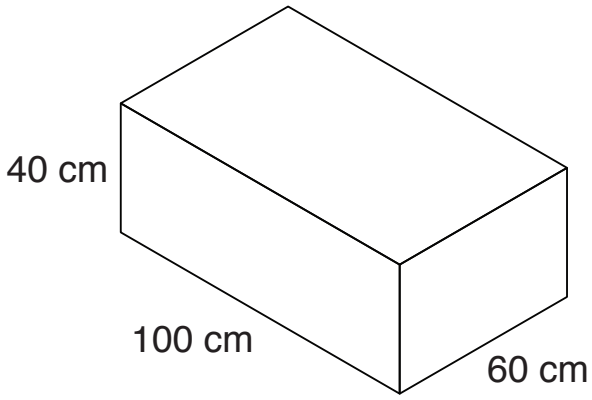
F/H

1 The diagram shows a tank in the shape of a cuboid.
It also shows a container in the shape of a cuboid.

Tank



Container



The tank is full of oil.
The container has 60 000 cm^3 of oil.

The oil from the tank is put into the container.

Work out the height of the oil in the container.
Give your answer to one decimal place.

Answer _____

8.3 Volume and transferring next steps 1

1a 50 cm × 40 cm × 20 cm = 40 000 cm^3
1b Area of the base: 60 × 40 = 2400 cm^2
Height: 24 000 ÷ 2400 = 10 cm
1c 40 000 cm^3 ÷ 2400 cm^2 = 16.7 cm
16.7 cm + 10 cm = 26.7 cm

8.3 Volume and transferring next steps 2

1a 50 cm × 40 cm × 20 cm = 40 000 cm^3
1b Area of the base: 60 × 30 = 1800 cm^2
Height: 36 000 ÷ 1800 = 20 cm
1c 40 000 cm^3 ÷ 1800 cm^2 = 22.2 cm
22.2 cm + 20 cm = 42.2 cm

8.3 Volume and transferring next steps: Test

1 Volume of the tank:
30 cm × 50 cm × 40 cm = 60 000 cm^3

Area of the base of the container:
100 × 60 = 6 000 cm^2

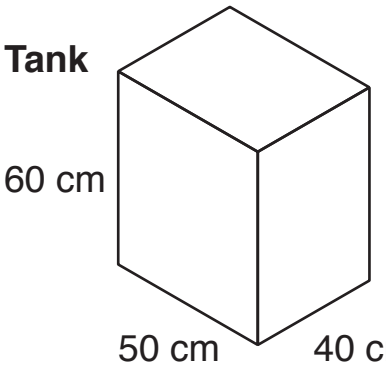
Height of the oil in the container:
60 000 ÷ 6 000 = 10 cm

Height of the oil in the container after adding the oil from the tank :
60 000 cm^3 ÷ 6 000 cm^2 = = 10 cm
10 cm + 10 cm = **20cm**

8.4 Volume and transferring advanced 1

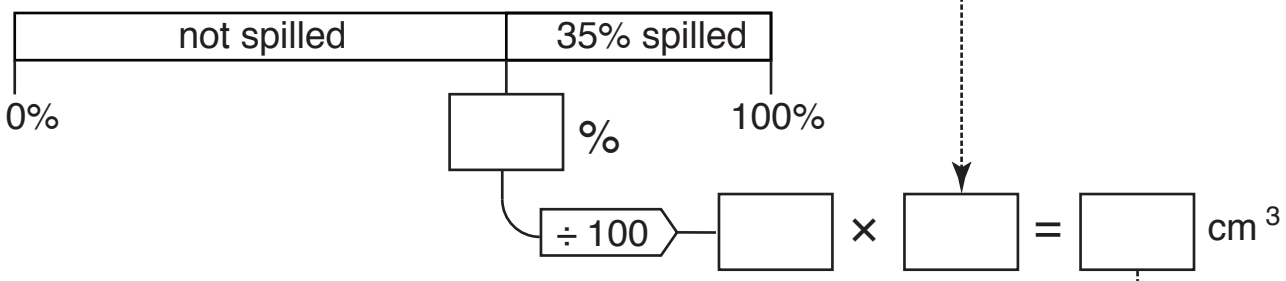
F/H

1a The diagram shows a **tank** in the shape of a **cuboid**.
Calculate the **volume** of the tank.

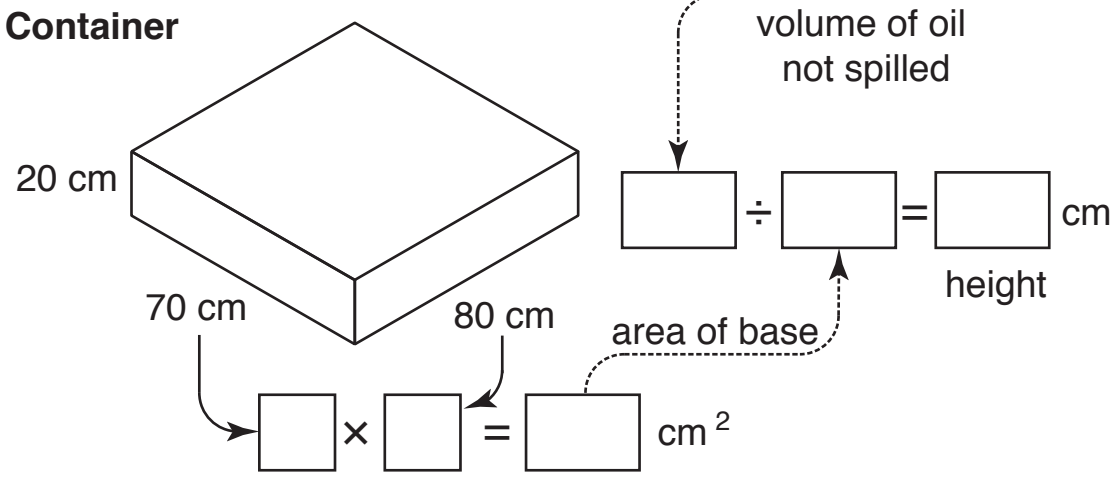


□ × □ × □ = □ cm ^{3}

1b The tank is **full** of oil.
35% of the oil from the tank is **spilled**.
Calculate the **volume** of oil that is **not spilled**.



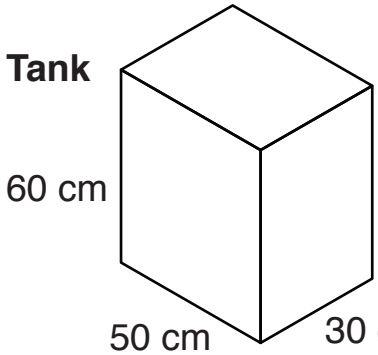
1c The diagram shows an **empty** container in the shape of a **cuboid**.
The oil that is **not spilled** from the **tank** is put in the **container**.
Work out the **height** of the oil in the container.



8.4 Volume and transferring advanced 2

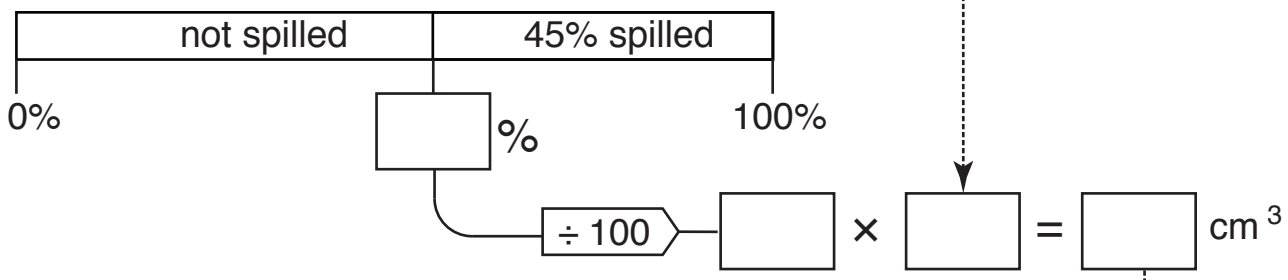
F/H

1a The diagram shows a **tank** in the shape of a **cuboid**.
Calculate the **volume** of the tank.

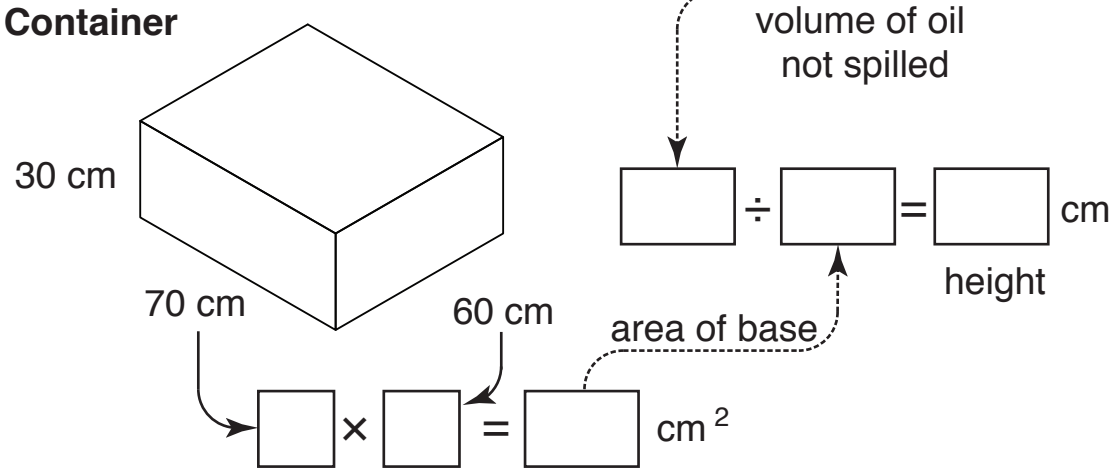


□ × □ × □ = □ cm ^{3}

1b The tank is **full** of oil.
45% of the oil from the tank is spilled.
Calculate the **volume** of oil that is not spilled.



1c The diagram shows a container in the shape of a **cuboid**.
The container is **empty**.
The oil that is **not spilled** from the **tank** is put in the **container**.
Work out the **height** of the oil in the container.

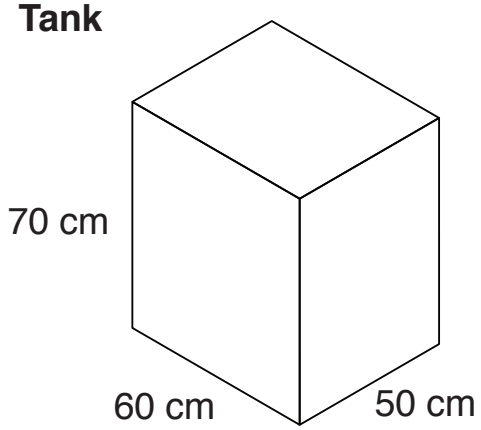


8.4 Volume and transferring advanced: Test

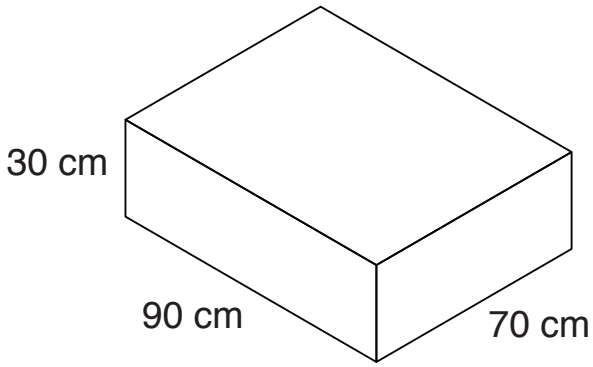
F/H

1 The diagram shows a tank in the shape of a cuboid.
It also shows a container in the shape of a cuboid.

Tank



Container



The tank is full of oil.
The container is empty.

35% of the oil from the container is spilled.
The rest of the oil is put into the container.

Work out the height of the oil in the container.
Give your answer to one decimal place.

Answer _____

8.4 Volume and transferring advanced: Answers

F/H

8.4 Volume and transferring advanced 1

1a 60 cm × 50 cm × 40 cm = 120000 cm^3

1b $\frac{65}{100} = 0.65$

0.65 × 120000 cm^3 = 78 000 cm^3

1c Area of the base: 70 × 80 = 5600 cm^2

Height: 78 000 ÷ 5600 = 13.9 cm

8.4 Volume and transferring advanced 2

1a 60 cm × 50 cm × 30 cm = 90 000 cm^3

1b $\frac{55}{100} = 0.55$

0.55 × 90 000 cm^3 = 49 500 cm^3

1c Area of the base: 70 × 60 = 4200 cm^2

Height: 49 500 ÷ 4200 = 11.8 cm

8.4 Volume and transferring advanced: Test

1 Volume of the tank:

70 cm × 60 cm × 50 cm = 210000 cm^3

Volume of oil not spilled:

$\frac{65}{100} = 0.65$

0.65 × 210 000 cm^3 = 136 500 cm^3

Area of the base of container:

90 × 70 = 6300 cm^2

Height of oil in the container:

136 500 ÷ 6300 = **21.7 cm**