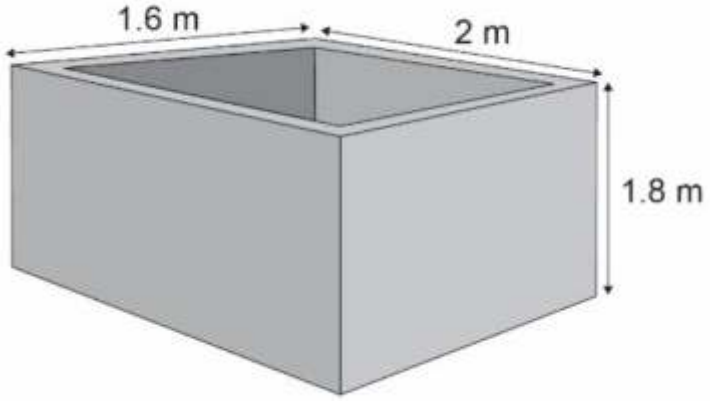
Curriculum Aligned Competency Based Test Items
Mathematics
Class 10 – Chapter 13
Surface Area and Volume

An open water tank walls are of thickness 10 cm.



SAS21M10S1301

1 What is the outer surface area of its wall?

_____

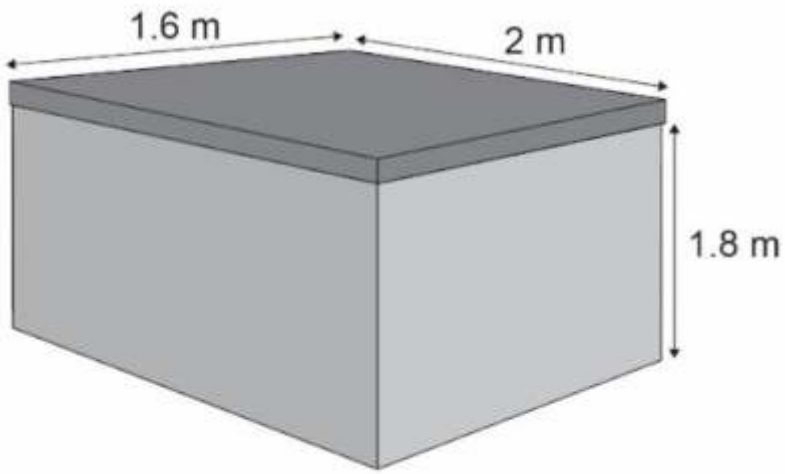
_____

SAS21M10S1302

2 Which of the following gives the capacity (in litre) of the tank?

A. $1.8 \times 1.4 \times 1.6$
B. $1.9 \times 1.5 \times 1.7$
C. $2 \times 1.6 \times 1.8$
D. $2.1 \times 1.7 \times 1.9$

A lid was built to cover the top of the tank.



SAS21M10S1303

3 The thickness of the lid is 3 cm.
What is the total surface area (in m2) of the lid?

A. 3.412
B. 6.4
C. 6.62
D. 19.576

SAS21M10S1304

4 The lid is made of cement.
What is the volume of the cement used?

_____

_____

SAS21M10S1305

5 The inner surfaces of the tank is covered with square tiles.
The side length of a tile is 10 cm.
How many tiles would be required?

A. 1296
B. 1548
C. 1800
D. 4032

SAS21M10S1306

6 Water is supplied to a village through a water tanker.

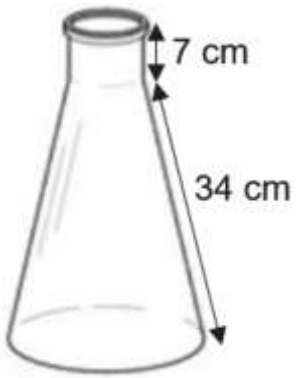
The water tanker is cylindrical in shape with diameter 110 cm and height 118 cm. A total of 30,000 litres of water is supplied through the tanker.

How many times was the water tanker used? (The tanker was always used at full capacity.)
(Use $\pi = 3.14$ and $1m^3 = 1000$ litres)

_____

_____

This is the picture of a glass flask used in chemistry lab.



The radius of the upper rim is 3 cm and the radius of the base of the flask is 9 cm.

SAS21M10S1307

7 What is the surface area of the flask?

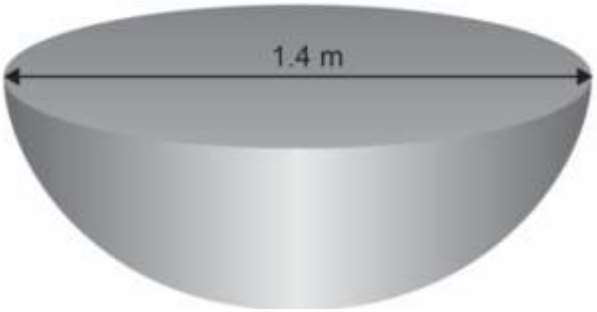
A. $429\pi\ cm^2$
B. $531\pi\ cm^2$
C. $558\pi\ cm^2$
D. $582\pi\ cm^2$

SAS21M10S1308

8 For an experiment, water is filled up to the slant height of the flask.
What volume (in cm3) of the flask is filled with water?

A. 63π
B. $135\sqrt{43}\pi$
C. $192\sqrt{70}\pi$
D. $(192\sqrt{70}+63)\pi$

A table in a restaurant is in the shape of a hemisphere.



SAS21M10S1309

9 What is the surface area of the table top?

A. $0.49\pi\ m^2$
B. $0.98\pi\ m^2$
C. $1.47\pi\ m^2$
D. $5.88\pi\ m^2$

SAS21M10S1310

10 The table is made of wood.
What is the volume of the wood used?

A. $0.343\pi\ m^3$
B. $0.229\pi\ m^3$
C. $0.457\pi\ m^3$
D. $0.829\pi\ m^3$

Answers

Item Number	
Question Code	SAS21M10S1301
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of Cuboid
Competency	Employ
Item Type	Closed constructed response
Full Credit (Full Score)	12.96 12.96 m2 12.96 square m 12.96 square metre
No Credit (No Score)	Any other response or missing response

Item Number	Question 2
Question Code	SAS21M10S1302
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of Cuboid
Competency	Formulate
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. 1.8×1.4×1.6
No Credit (No Score)	Any other response or missing response

Item Number	Question 3
Question Code	SAS21M10S1303
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of Cuboid
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. 6.62
No Credit (No Score)	Any other response or missing response

Item Number	Question 4
Question Code	SAS21M10S1304
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of Cuboid
Competency	Employ
Item Type	Closed constructed response
Full Credit (Full Score)	0.096 m3 0.096 cubic m 0.096 cubic metre 96,000 cm3 96,000 cubic cm 0.096 cubic centimetre
No Credit (No Score)	Any other response or missing response

Item Number	Question 5
Question Code	SAS21M10S1305
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of Cuboid
Competency	Interpret & Evaluate
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 1616
No Credit (No Score)	Any other response or missing response

Item Number	Question 6
Question Code	SAS21M10S1306
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of a Cylinder
Competency	Interpret & Evaluate
Item Type	Closed constructed response
Full Credit (Full Score)	26 27
No Credit (No Score)	Any other response or missing response

Item Number	Question 7
Question Code	SAS21M10S1307
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of a Combination of Solids
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 531π cm2
No Credit (No Score)	Any other response or missing response

Item Number	Question 8
Question Code	SAS21M10S1308
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of a Combination of Solids
Competency	Interpret & Evaluate
Item Type	Multiple Choice Question
Full Credit (Full Score)	C. $156\sqrt{70}\pi$
No Credit (No Score)	Any other response or missing response

Item Number	Question 9
Question Code	SAS21M10S1309
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of Hemisphere
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	A. 0.49π m2
No Credit (No Score)	Any other response or missing response

Item Number	Question 10
Question Code	SAS21M10S1310
Grade & Chapter Name	Grade 10 | Surface Area and Volume
Concept | Sub-concept	Mensuration | Surface Area and Volume of Hemisphere
Competency	Employ
Item Type	Multiple Choice Question
Full Credit (Full Score)	B. 0.229π m3
No Credit (No Score)	Any other response or missing response