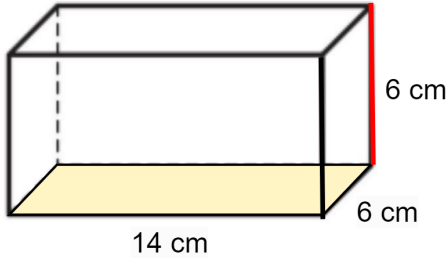
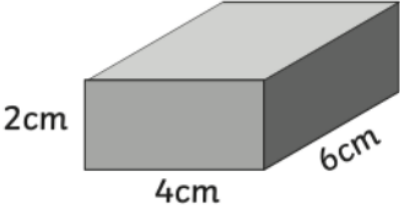
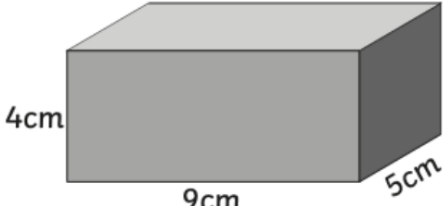
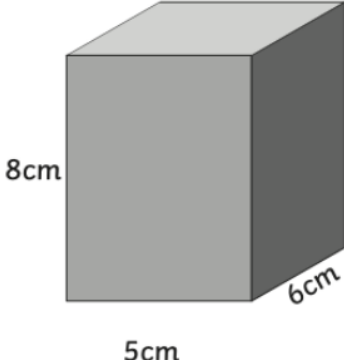


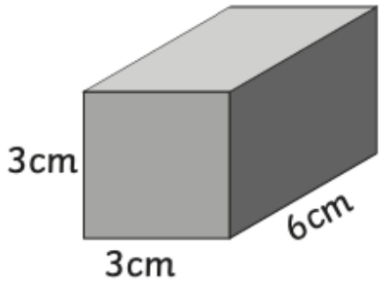
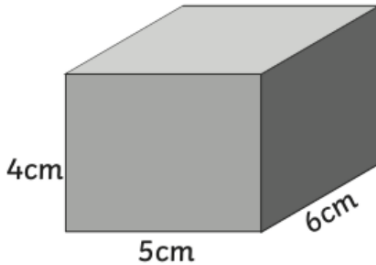
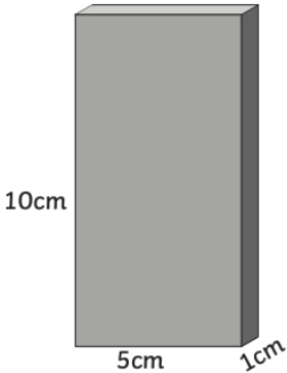
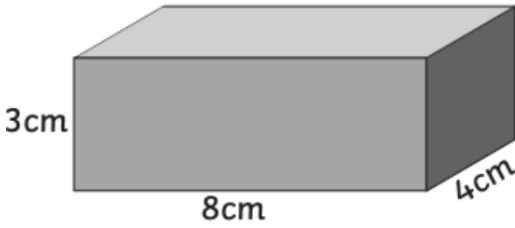
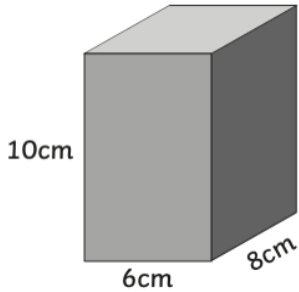


Year 6 Worksheet 10 - Volume and 3D shape

Question 1: Find the Volume.

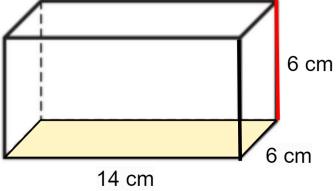
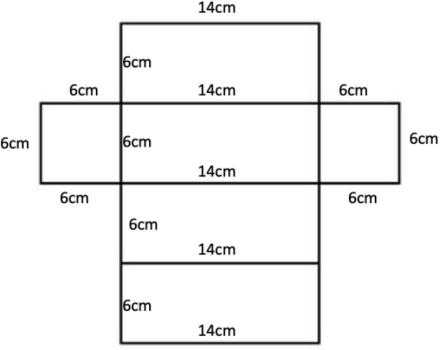
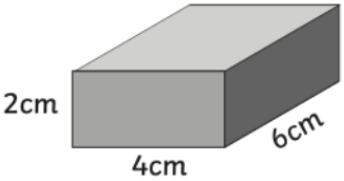
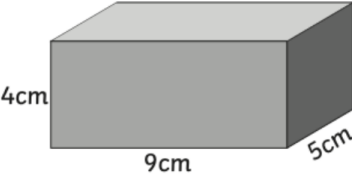
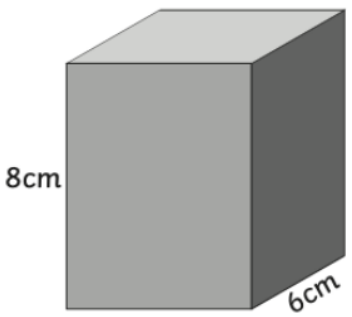
Shape	Volume
	$\begin{aligned}\text{Volume} &= \text{Area} \times \text{Height} \\ &= (14 \times 6) \times 6 \\ &= 84 \times 6 \\ &= 504 \text{ cm}^3\end{aligned}$
	
	
	



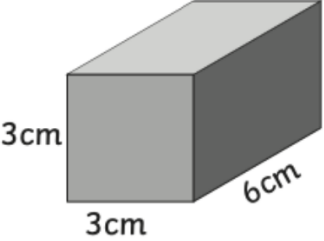
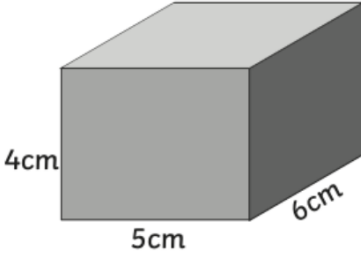
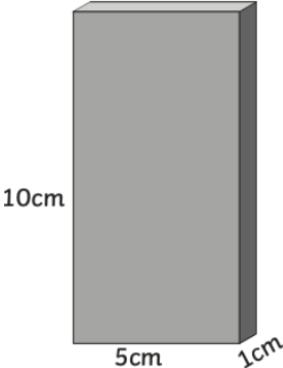
	
	
	
	
	



Question 2: Draw the net and find the Surface Area.

Shape	Net	Surface Area
		<p>Net: 4 rectangles (14x6) 2 cubes (6x6)</p> <p>Area: $4 \times (14 \times 6) = 336$ $2 \times (6 \times 6) = 72$</p> <p>Surface Area: $336 + 72 = 408$</p>
		
		
		





Question 3: Answer the following.

1	Classify the 3D shape with all sides equal: cube or sphere?
2	Identify the shape with curved surface and no vertices: cone or cylinder?
3	Calculate the volume of a rectangular prism with length 6 cm, width 4 cm, and height 3 cm.
4	Find the surface area of a rectangular prism with length 10 cm, width 5 cm, and height 8 cm.
5	Classify the 3D shape with a circular base and curved surface: cone or pyramid?



6	Find the volume of a rectangular prism with length 8 m, width 3 m, and height 2 m.
7	Find the surface area of a rectangular prism with length 12 cm, width 6 cm, and height 9 cm.
8	Classify the 3D shape with no edges or vertices: sphere or cylinder?
9	Find the volume of a rectangular prism with length 14 m, width 7 m, and height 5 m.
10	Classify the 3D shape with square base and triangular sides: cone or pyramid?



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Answer Key

Question 1:

Volume
$4 \times 6 \times 2 = 48$ cubic units
$9 \times 5 \times 4 = 180$ cubic units
$5 \times 6 \times 8 = 240$ cubic units
$3 \times 6 \times 3 = 54$ cubic units
$5 \times 6 \times 4 = 120$ cubic units
$5 \times 1 \times 10 = 50$ cubic units
$3 \times 8 \times 4 = 96$ cubic units
$6 \times 8 \times 10 = 480$ cubic units

Question 2:

Surface Area
$2(4 \times 6 + 6 \times 2 + 2 \times 4) = 2(24 + 12 + 8) = 88$ square units
$2(9 \times 5 + 5 \times 4 + 4 \times 9) = 2(45 + 20 + 36) = 202$ square units
$2(5 \times 6 + 6 \times 8 + 8 \times 5) = 2(30 + 48 + 40) = 236$ square units
$2(3 \times 6 + 6 \times 3 + 3 \times 3) = 2(18 + 18 + 9) = 90$ square units
$2(5 \times 6 + 6 \times 4 + 4 \times 5) = 2(30 + 24 + 20) = 148$ square units
$2(5 \times 1 + 1 \times 10 + 10 \times 5) = 2(5 + 10 + 50) = 130$ square units



Question 3: Answer the following.

1	Classify the 3D shape with all sides equal: cube or sphere? Answer: Cube
2	Identify the shape with curved surface and no vertices: cone or cylinder? Answer: Cone
3	Calculate the volume of a rectangular prism with length 6 cm, width 4 cm, and height 3 cm. Answer: Volume = $6 \text{ cm} \times 4 \text{ cm} \times 3 \text{ cm} = 72 \text{ cubic cm}$
4	Find the surface area of a rectangular prism with length 10 cm, width 5 cm, and height 8 cm. Answer: Surface Area = $2(10 \text{ cm} \times 5 \text{ cm}) + 2(10 \text{ cm} \times 8 \text{ cm}) + 2(5 \text{ cm} \times 8 \text{ cm}) = 340 \text{ square cm}$
5	Classify the 3D shape with a circular base and curved surface: cone or pyramid? Answer: Cone
6	Find the volume of a rectangular prism with length 8 m, width 3 m, and height 2 m. Answer: Volume = $8 \text{ m} \times 3 \text{ m} \times 2 \text{ m} = 48 \text{ cubic m}$
7	Find the surface area of a rectangular prism with length 12 cm, width 6 cm, and height 9 cm. Answer: Surface Area = $2(12 \text{ cm} \times 6 \text{ cm}) + 2(12 \text{ cm} \times 9 \text{ cm}) + 2(6 \text{ cm} \times 9 \text{ cm}) = 468 \text{ square cm}$
8	Classify the 3D shape with no edges or vertices: sphere or cylinder? Answer: Sphere
9	Find the volume of a rectangular prism with length 14 m, width 7 m, and height 5 m. Answer: Volume = $14 \text{ m} \times 7 \text{ m} \times 5 \text{ m} = 490 \text{ cubic m}$
10	Classify the 3D shape with square base and triangular sides: cone or pyramid? Answer: Pyramid