Worksheet

04/16/2020

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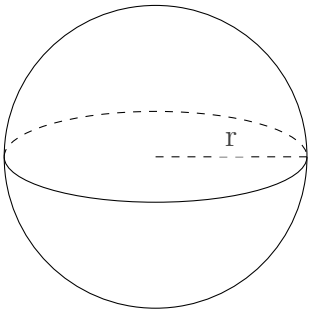
Problem quickname: 2200

1)

Quick: 2200

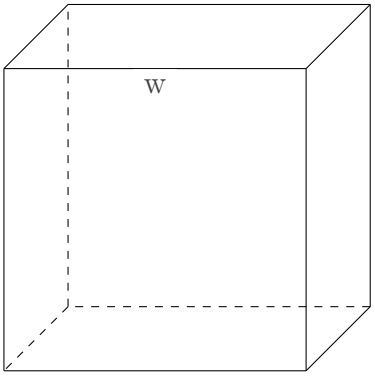
State the formulas for the required metrics of the given shape and calculate their approximate values.

a)



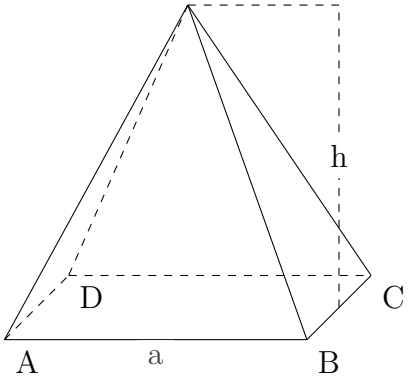
This is a sphere. We have $r = 7$. The surface area is: $A = 4 \cdot \Pi \cdot r^2 = 615$. The volume is: $V = \frac{4}{3} \cdot \Pi \cdot r^3 = 1436$.

b)



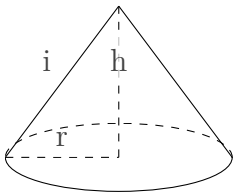
This is a cube. All edges of the shape are of the same length with $w = 12$. The surface area is: $A = 6 \cdot w^2 = 864$. The volume is: $V = w^3 = 1728$.

c)



This is a square pyramid. The base of this shape is formed by a square. We have $a = 10$, $h = 10$. The surface area is: $A = a^2 + a \cdot \sqrt{4 \cdot h^2 + a^2} = 324$. The volume is: $V = \frac{1}{3} \cdot a^2 \cdot h = 333$.

d)



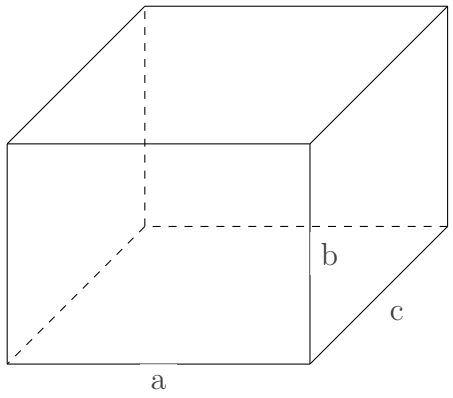
This is a cone. We have $h = 8$, $i = 10$, $r = 6$. The surface area is: $A = r \cdot \Pi \cdot (r + i) = 301$. The volume is: $V = \frac{1}{3} \cdot \Pi \cdot r^2 \cdot h = 301$.

2)

Quick: 2200

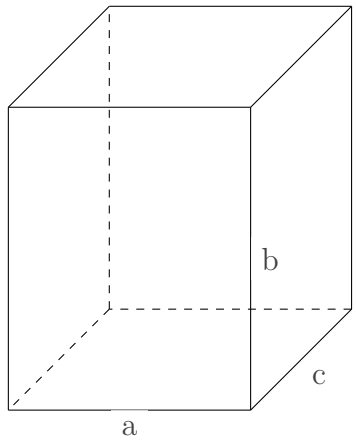
State the formulas for the required metrics of the given shape.

a)



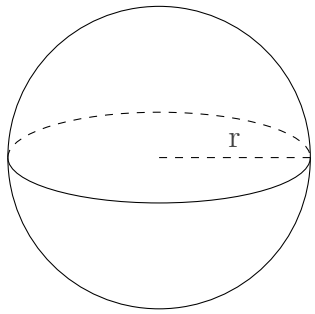
This is a cuboid. We have a=11 cm, b=8 cm, c=10 cm. The surface area is: $A = 2 \cdot (a \cdot b + b \cdot c + a \cdot c)$=556 cm^2.

b)



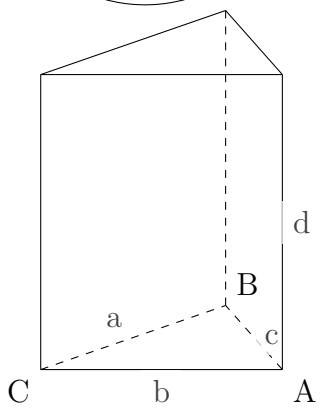
This is a cuboid. We have a=12 cm, b=15 cm, c=10 cm. The volume is: $V = a \cdot b \cdot c$=1800 cm^3.

c)



This is a sphere. We have r=10 cm. The surface area is: $A = 4 \cdot \Pi \cdot r^2$=1256 cm^2.

d)



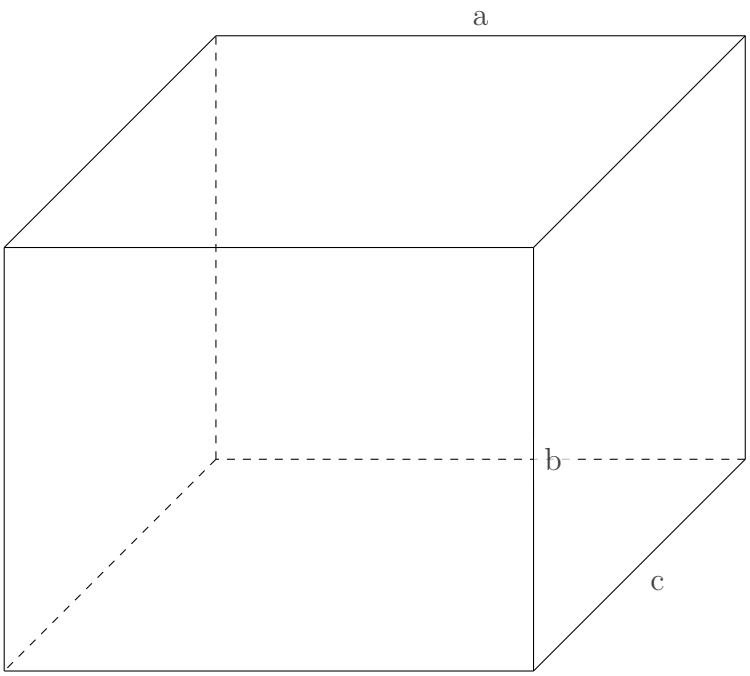
This is a prism. The base of this shape is formed by a triangle ABC which has an area of A(triangle)=1734 cm^2. We have a=51 cm, b=68 cm, c=85 cm, d=83 cm. The surface area is: $A = 2 \cdot A(\text{triangle}) + d \cdot (a + b + c)$=20400 cm^2.

3)

Quick: 2200

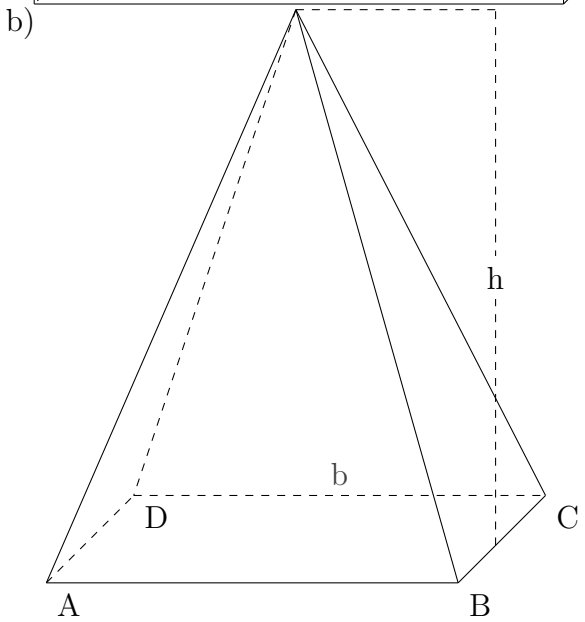
Calculate the approximate values of the shapes metrics a requested.

a)



This is a cuboid. We have $a = 10$, $b = 8$, $c = 8$. The surface area is: $A = 2 \cdot (a \cdot b + b \cdot c + a \cdot c) = 448$.

b)



This is a square pyramid. The base of this shape is formed by a square. We have $b = 7$, $h = 9$. The surface area is: $A = b^2 + b \cdot \sqrt{4 \cdot h^2 + b^2} = 184$.

Good Luck!