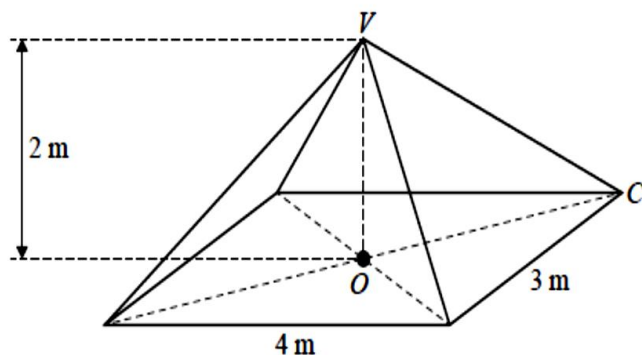


Q1: The diagram shows a cube of sidelength 2.2 m. The point M is the midpoint of side \overline{CA}

- Calculate the length of \overline{DM} . Give your answer correct to two decimal places.
- Calculate the angle of depression from D to M. Give your answer correct to one decimal place.

Question 2

A right pyramid, shown below, has a rectangular base with length 4 m and width 3 m. The height of the pyramid is 2 m.



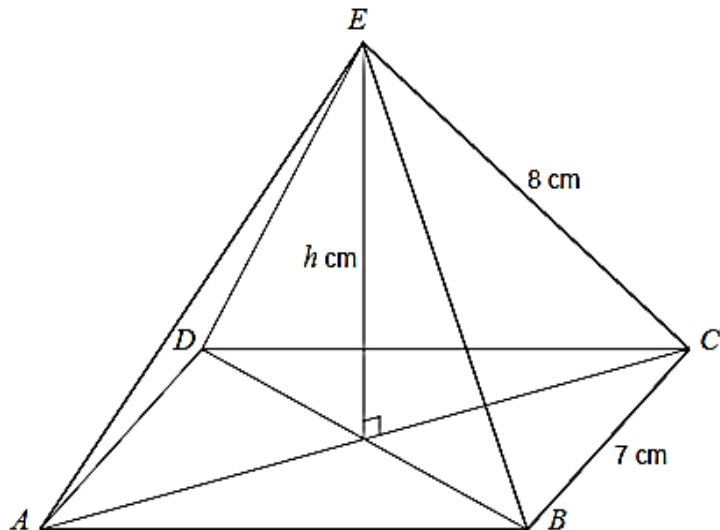
The angle $\angle VCO$ that the sloping edge VC makes with the base of the pyramid, to the nearest degree, is

a.

- A. 22°
- B. 27°
- C. 34°
- D. 39°
- E. 45°

Question 3

For the square-based right pyramid, $ABCDE$, shown below, the sides of the base are 7 cm and the slant edges are 8 cm in length.

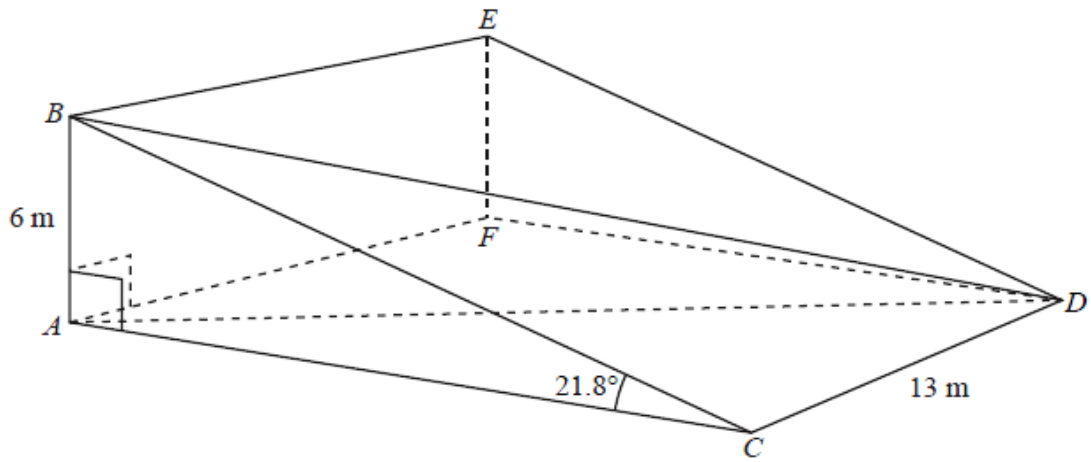


The vertical height, h cm, of this pyramid is closest to

- A. 3.9 cm
- B. 6.3 cm
- C. 7.2 cm
- D. 10.6 cm
- E. 12.7 cm

Question 4

The diagram below shows a right-triangular prism $ABCDEF$.
In this prism, $AB = 6$ m, angle $ACB = 21.8^\circ$ and $CD = 13$ m.



The size of the angle CBD is closest to

- A. 21.6°
- B. 26.7°
- C. 38.8°
- D. 40.9°
- E. 51.2°

Question 5

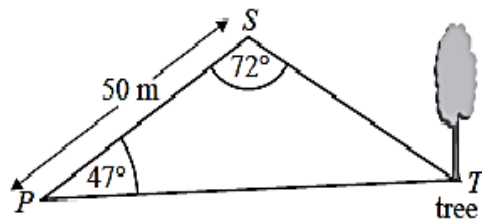
A closed cubic box of side length 36 cm is to contain a thin straight metal rod.
The maximum possible length of the rod is closest to

- A. 36 cm
- B. 51 cm
- C. 62 cm
- D. 108 cm
- E. 216 cm

Question 6

A tree is growing near the block of land.

The base of the tree, T , is at the same level as the corners, P and S , of the block of land.

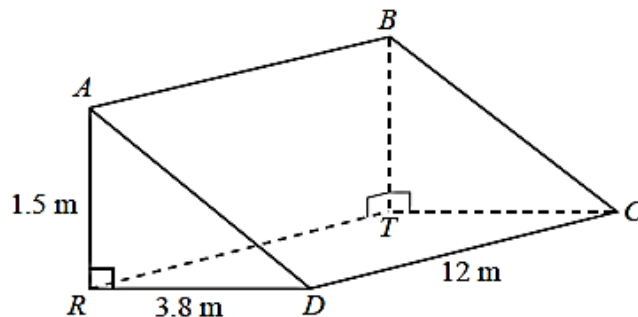


- a. Show that, correct to two decimal places, distance ST is 41.81 metres.

1 mark

- b. From point S , the angle of elevation to the top of the tree is 22° .
Calculate the height of the tree.
Write your answer, in metres, correct to one decimal place.

Question 7



$ABCD$ is a sloping rectangular roof above a horizontal rectangular ceiling, $TCDR$.

$$AB = DC = 12 \text{ metres}$$

$$RD = TC = 3.8 \text{ metres}$$

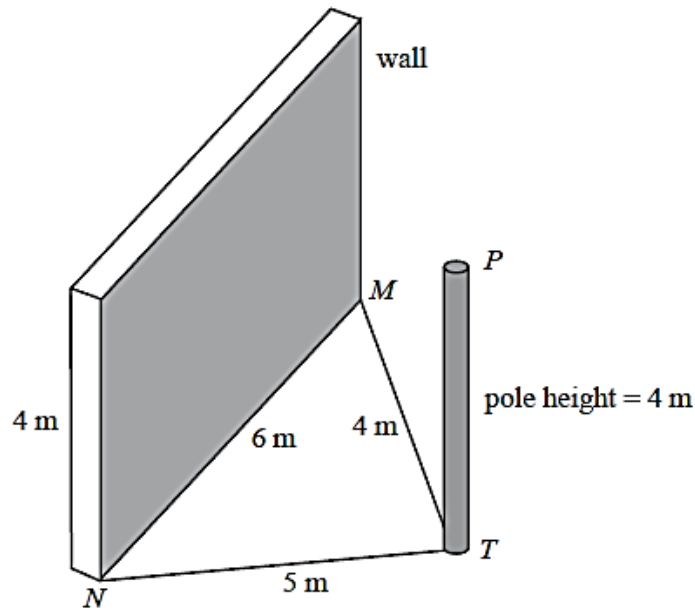
$$AR = BT = 1.5 \text{ metres}$$

Question 6

The angle of depression of D from A is closest to

- A. 21.5°
- B. 23.3°
- C. 66.7°
- D. 68.5°
- E. 111.5°

Question 8



A vertical pole, TP , is 4 metres tall and stands on level ground near a vertical wall.

The wall is 6 metres long and 4 metres high.

The base of the pole, T , is 5 metres from one end of the wall at N and 4 metres from the other end of the wall at M .

The pole falls and hits the wall.

The maximum height above ground level at which the pole could hit the wall is closest to

- A. 0 m
- B. 1.5 m
- C. 2.3 m
- D. 2.7 m
- E. 3.3 m