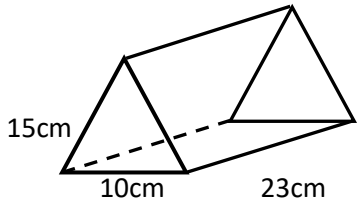
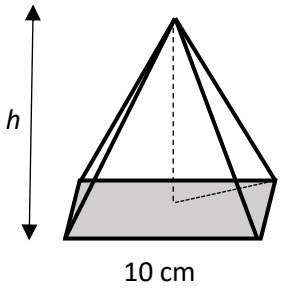
National 5 Final Exam Practice	
Geometric Skills	Pythagoras in Context and in 3D
Average Allocation	3/4Marks

1. Calculate the volume of the triangular prism below correct to 2 significant figures.



2. Calculate the height *h* of the square based pyramid below.



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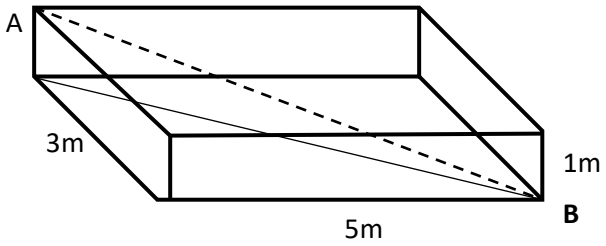
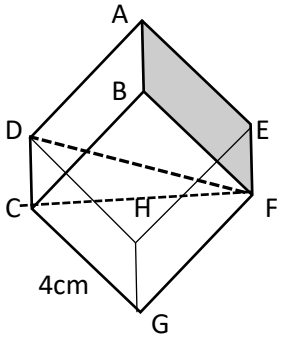
3. The roof for a house extension is shown below. Two layers of the roof are supported by a diagonal beam AB. Calculate the length of the beam to 1 decimal place.

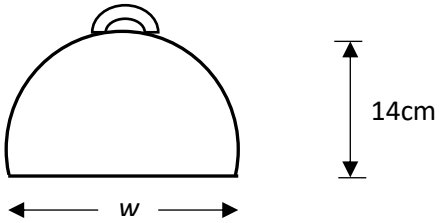


4. The **maximum length** of a cube is the measurement between one corner and the direct opposite corner as shown by the line DF below.

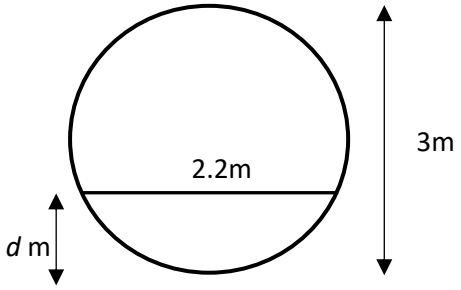


If the length of the side of the cube is 4cm, find its maximum length, leaving your answer as a surd in the form $k\sqrt{3}$, and state the value of *k*.

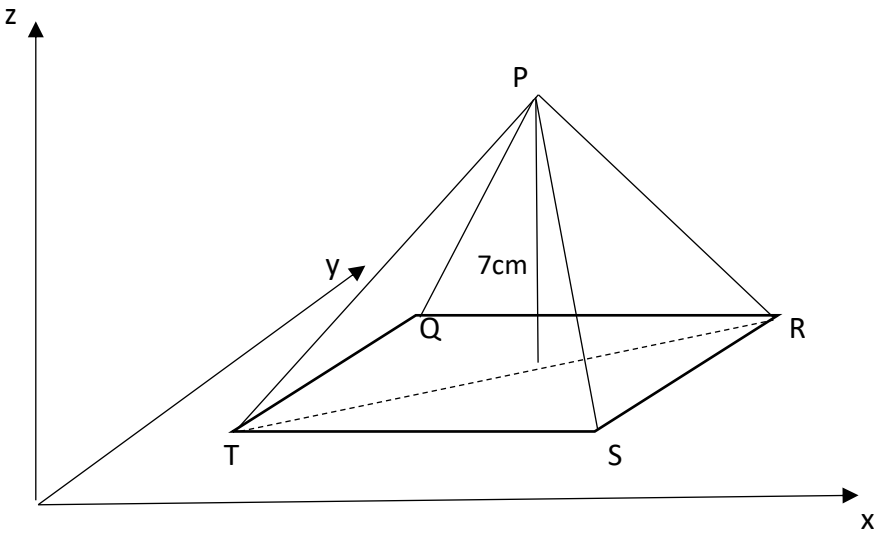
5. A cosmetics bag is being redesigned in the shape below.
The side of the bag is based on a circle with a radius of 8cm. The height of the bag without the handle is 14cm.
Calculate the width, *w*, of the base of the bag,



6. A tanker is transporting oil to a refiner. It is filled to a depth *d* metres as shown. If the diameter of the tanker is 3 metres, find the depth of the oil.
Give your answer correct to 2 significant figures.



7.



In the diagram above, PQRST is a rectangular based pyramid where T is the point (1,2,0) and R is (7,6,0).

P lies directly above centre of the base and the height of the pyramid is 7cm.

Calculate the length of the edge PT of the pyramid.