

1 A cuboid container has the external dimensions 1.4m by 78cm by 81cm. The thickness of the container sides is 1cm thick. Water flows into the container at a rate of 95 litres per minute. The water is left flowing for 7mins 45 seconds. Does the container overflow?

2 The Core at Chernobyl was 7m high and 12m in diameter. Into this, 211 graphite tipped boron rods were lowered into this. On the 26<sup>th</sup> April 1986, this caused a catastrophic explosion that killed 31 people and possibly a lot more.

a) If each rod was 8cm radius and 6m long, what would be the total volume of the rods in the reactor?

b) What is the volume of the reactor that is not covered by rods?

3. The perimeter of the shape below is 140cm. All the equilateral triangles are congruent. What is the area of the shape?

