

PROBLEM 1

Kim and Jane sort letters in a Post Office.

By herself, Kim can sort a collection of letters in 8 hours, whilst Jane can sort them in 6 hours.

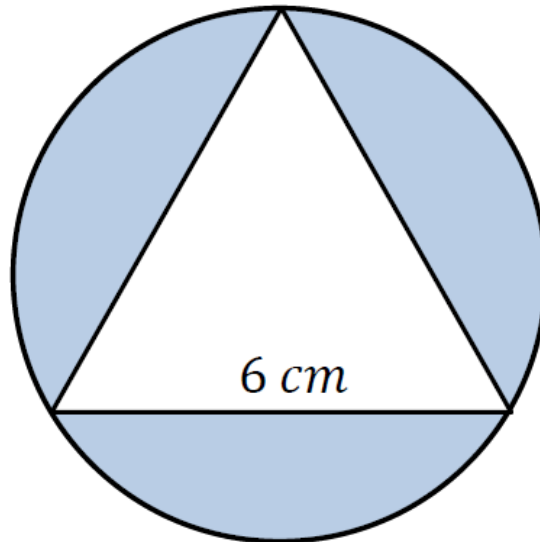
One day the manager asks them to sort a collection of letters together.

After three hours, what fraction of the collection remain to be sorted (assuming they do not get in each other's way)? How many more minutes will it take them to complete the sort?

PROBLEM 2

Circle area 1

This diagram shows an equilateral triangle of side length 6 cm drawn inside a circle so that each corner touches the circumference of the circle.

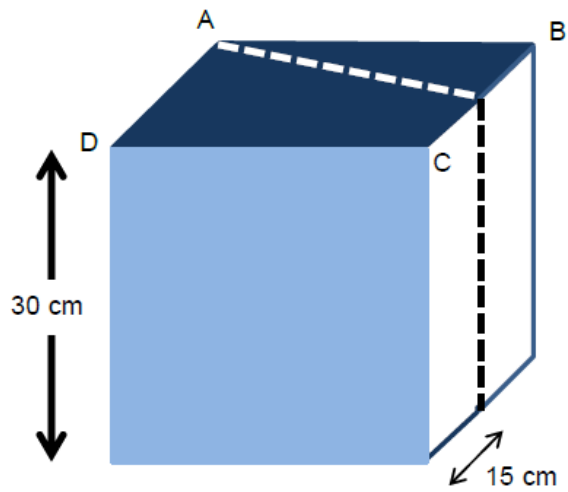


What area of the circle is shaded?

PROBLEM 3

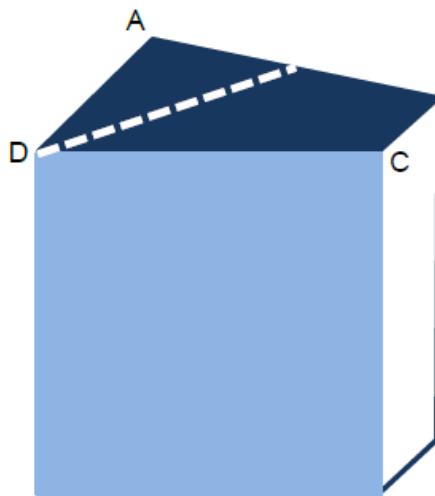
Cube Slice

A cube is sliced vertically along the line shown in the diagram and the smaller part is thrown away.



The cube is going to be sliced vertically downwards again by a line going through corner D.

Where would the slice have to be to split the cube into two equal volumes?



PROBLEM 4

The Warloe sequence is 1, 2, 3, 6, 11, where 2 is the 8th term in the sequence. each term after the third term in the sequence is the sum of the previous three terms.

What would be the sum of the 1st, 11th and 14th terms?

