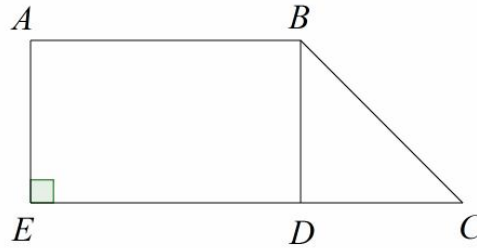(1) a, b and c are integers.

$$-4 < a \leq 1$$
$$-6.7 < b \leq 5$$
$$-5 \leq c < -2.8$$

Find the least value of abc.

(2) The trapezium $ADCDE$ is shown below.

EDC is a straight line.
BD is perpendicular to EDC
$AB = 5.5cm$
$DC = 3.1cm$
Angle $BCD = 47^o$

Find the perimeter of the trapezium.
Give your answer to 2 decimal places.

(3) Fred, John and Kathy share some money in the ratio 3:2:7.
Kathy has £600 more than John.
Fred invests his share in a bank account paying 5% compound interest a year.
How much will Fred's investment be worth after 8 years?
Give your answer to the nearest penny.

(4) Bo has a pond with a path around it.
The pond is a circle with radius 2.5m.
The path is also circular in shape has a constant width of 1.2m.
A diagram of the pond is shown below.
The grey shaded area represents the pond and the white area represents the path.
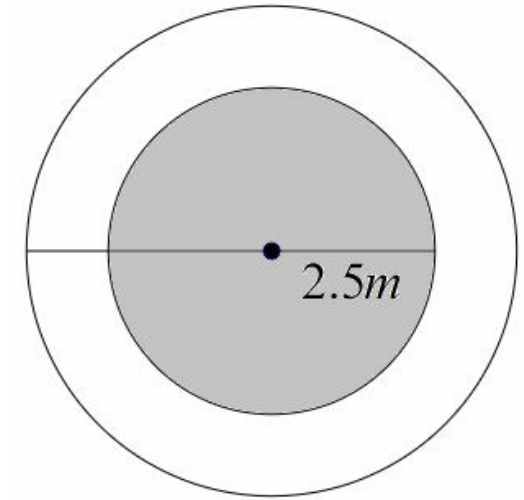
Bo wants to lay grass seed on the path.
He can buy grass seed for £4.60 a box and each box covers 5 square meters.
Find the cost of buying enough grass seed to cover the path.

(5) John and Jane are twins.
They are both in the same class at school with 11 other children.

The mean height of the class is 156cm.
The mean height of the class without John is 155.5cm.
The mean height of the class without Jane is 157.1cm.

Find the difference in height between John and Jane.
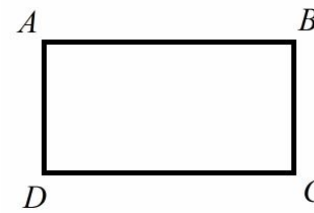Give your answer in meters.

(6) A plane flies east from an airport for 120km.
The plane then turns and flies on a bearing of 330° until it's directly north of the airport.
How far from the airport is the plane when it's directly north of the airport?
Give your answer to the nearest 1 km.

(7) The diagram below shows the rectangle $ABCD$.

$AB = 12cm$

$BC = 7cm$

Both AB and BC are measured correct to the nearest 1cm.

Find:
(a) The maximum area of the rectangle.
(b) The minimum perimeter of the rectangle.
(c) The maximum length of AC.

Give your answers to 3 significant figures where appropriate.

(8) Given that
$(x+a)(x+b) = x^2 - x - 6$
and $a > b$, find the value of $4a - 5b$.