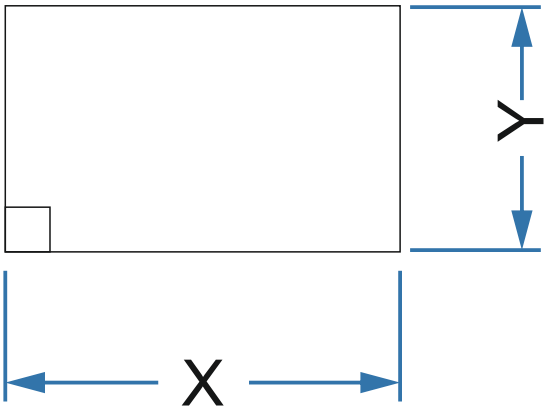
MATHEMATICAL SKILLS

AREA OF A RECTANGLE AND ASSOCIATED EXAMINATION QUESTIONS

DESIGN AND TECHNOLOGY

CALCULATING THE AREA OF A RECTANGLE

Definition: A rectangle has four sides, with the opposite sides being the same length and parallel. Each of the four internal angles are right angles, 90 degrees.

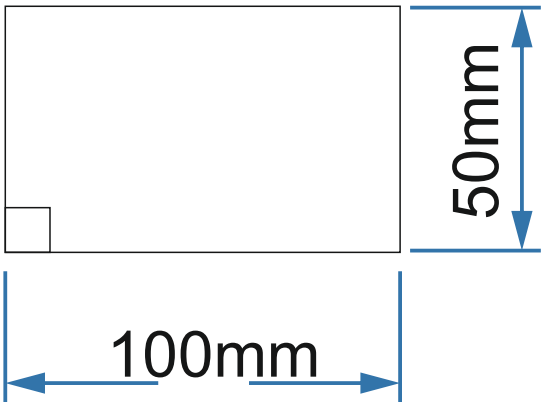


FORMULA

AREA = X multiplied by Y

AREA =LENGTH x HEIGHT

SAMPLE QUESTIONS

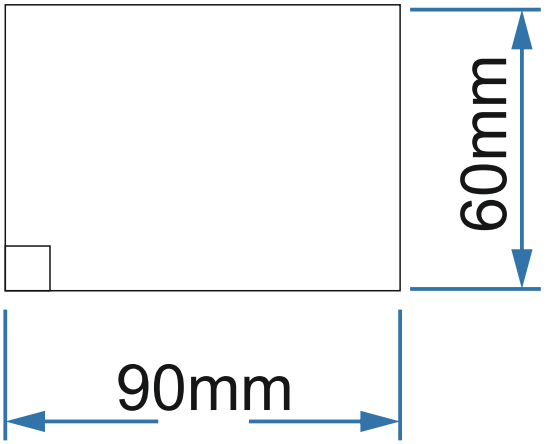


Calculate the area of the rectangle shown opposite.

AREA = X multiplied by Y

AREA = 100mm x 50mm

AREA = 5000mm²

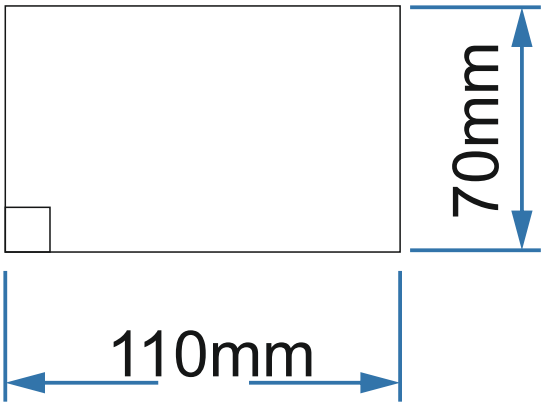


Calculate the area of the rectangle shown opposite.

AREA = X multiplied by Y

AREA = 90mm x 60mm

AREA = 5400mm²

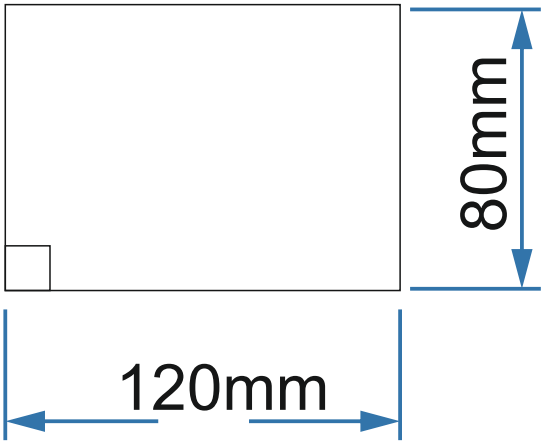


Calculate the area of the rectangle shown opposite.

AREA = X multiplied by Y

AREA = 110mm x 70mm

AREA = 7700mm²

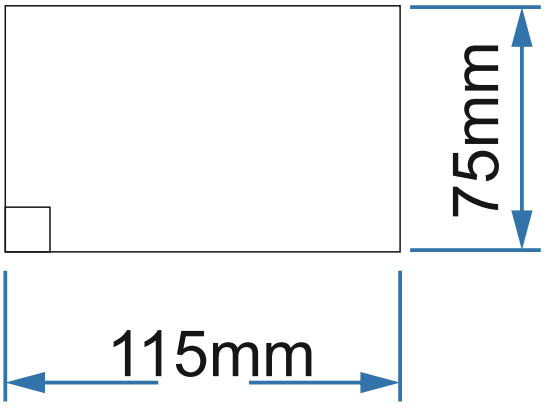


Calculate the area of the rectangle shown opposite.

AREA = X multiplied by Y

AREA = 120mm x 80mm

AREA = 9600mm²

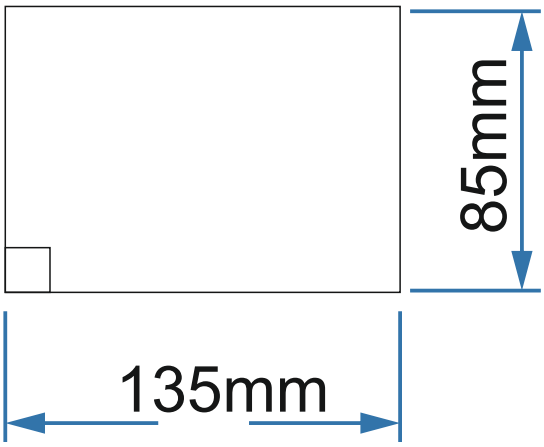


Calculate the area of the rectangle shown opposite.

AREA = X multiplied by Y

AREA = 115mm x 75mm

AREA = 8625mm²



Calculate the area of the rectangle shown opposite.

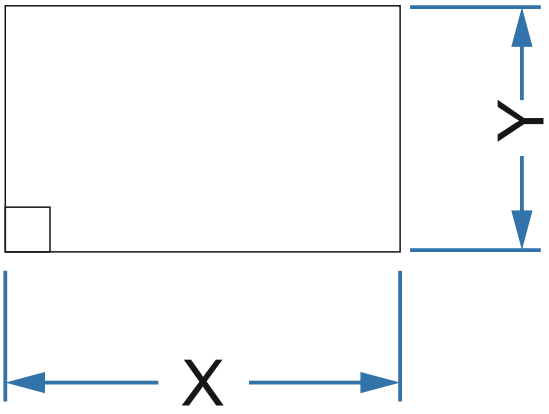
AREA = X multiplied by Y

AREA = 135mm x 85mm

AREA = 11475mm²

CALCULATING THE AREA OF A SQUARE

Definition: A rectangle has four sides, with the opposite sides being the same length and parallel. Each of the four internal angles are right angles, 90 degrees.

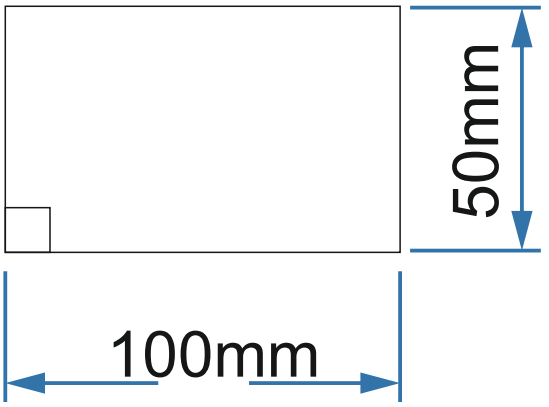


FORMULA

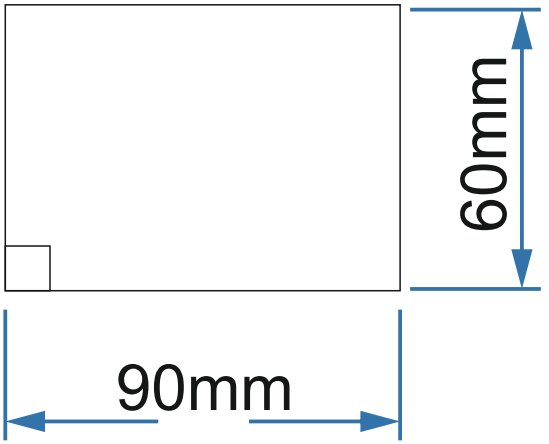
AREA = X multiplied by Y

AREA =LENGTH x HEIGHT

SAMPLE QUESTIONS

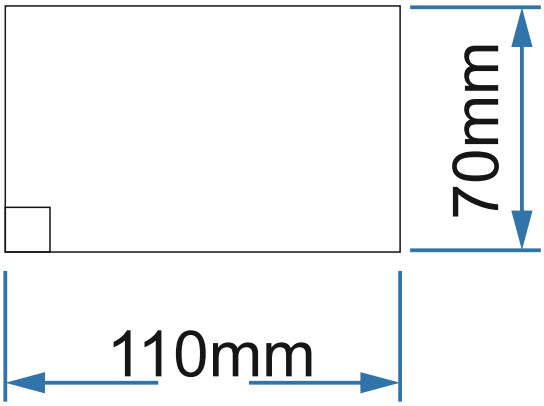


Calculate the area of the rectangle shown opposite.

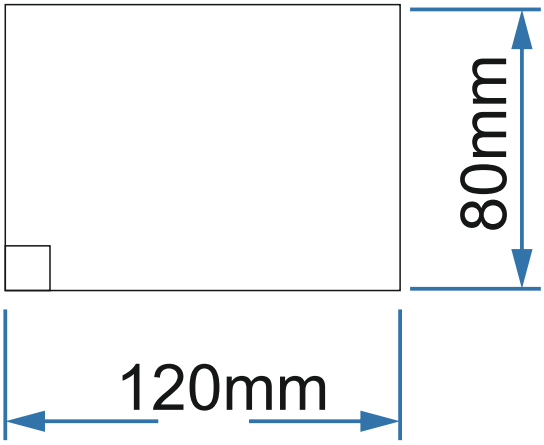


Calculate the area of the rectangle shown opposite.

SAMPLE QUESTIONS



Calculate the area of the rectangle shown opposite.



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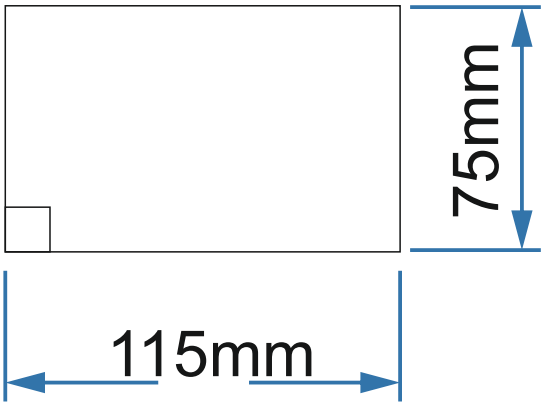
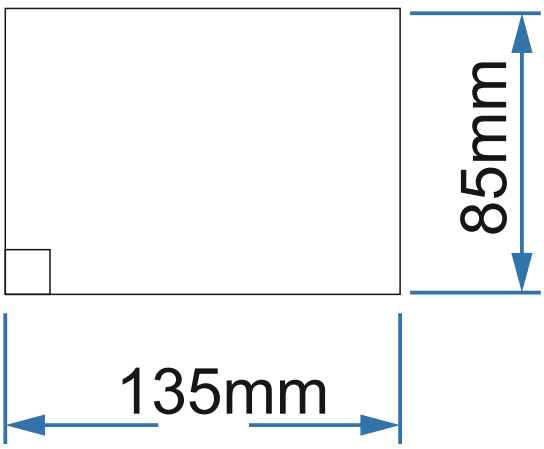


Calculate the area of the rectangle shown opposite.



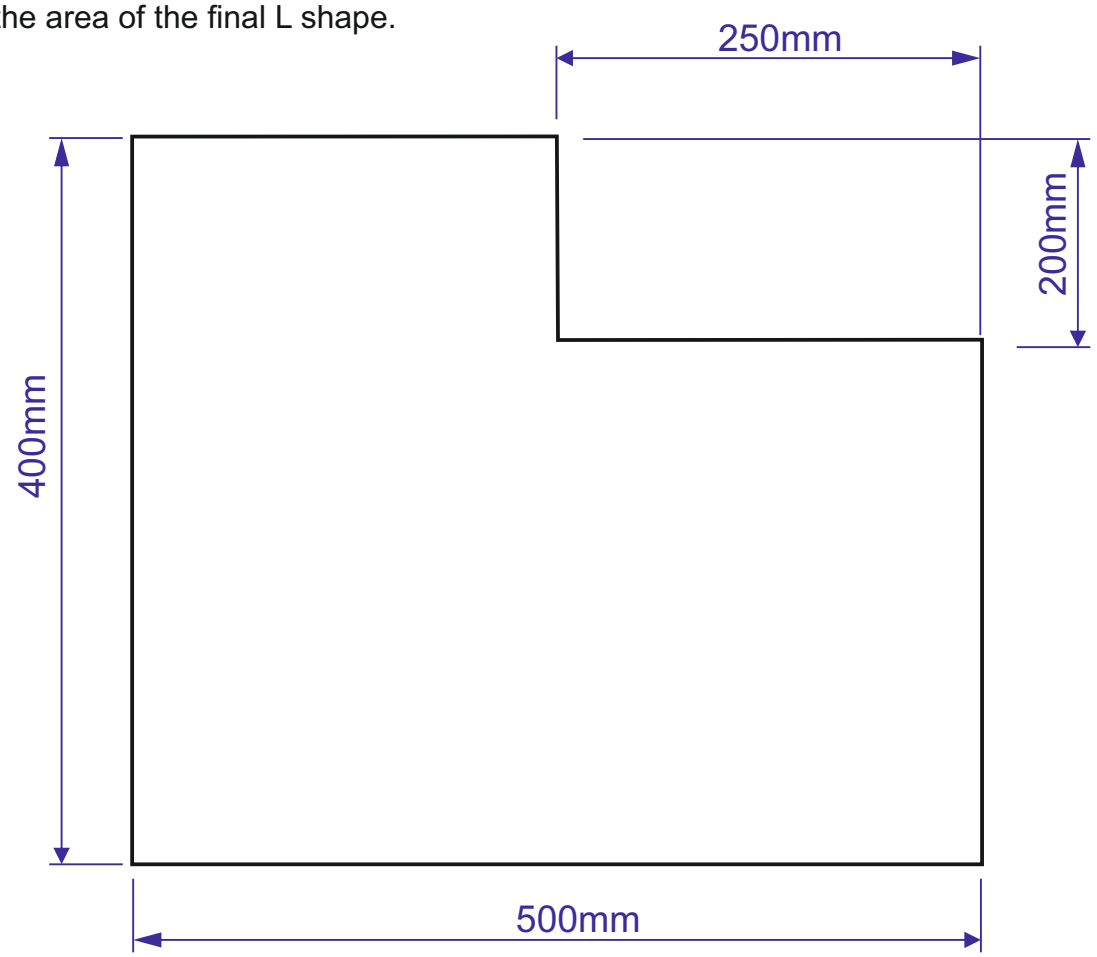
Calculate the area of the rectangle shown opposite.

AREA OF A RECTANGLE - EXAMINATION QUESTION

An acrylic panel for a storage unit is seen below.

1. Calculate the area of the acrylic required, before it is cut to shape (the overall rectangle of acrylic required, before it is cut to an L shape).

2. Calculate the area of the final L shape.



First, calculate the area of the uncut acrylic, by treating it as a rectangle 500mm x 400mm.

AREA = LENGTH X HEIGHT
AREA = 500 X 400
AREA = 200000mm²

Now, calculate the area of the smaller rectangular piece to be cut away, during the shaping of the panel

AREA = LENGTH X HEIGHT
AREA = 250 X 200
AREA = 50000mm²

Now subtract the smaller area from the area of the uncut plywood.

200000 - 50000 = 150000

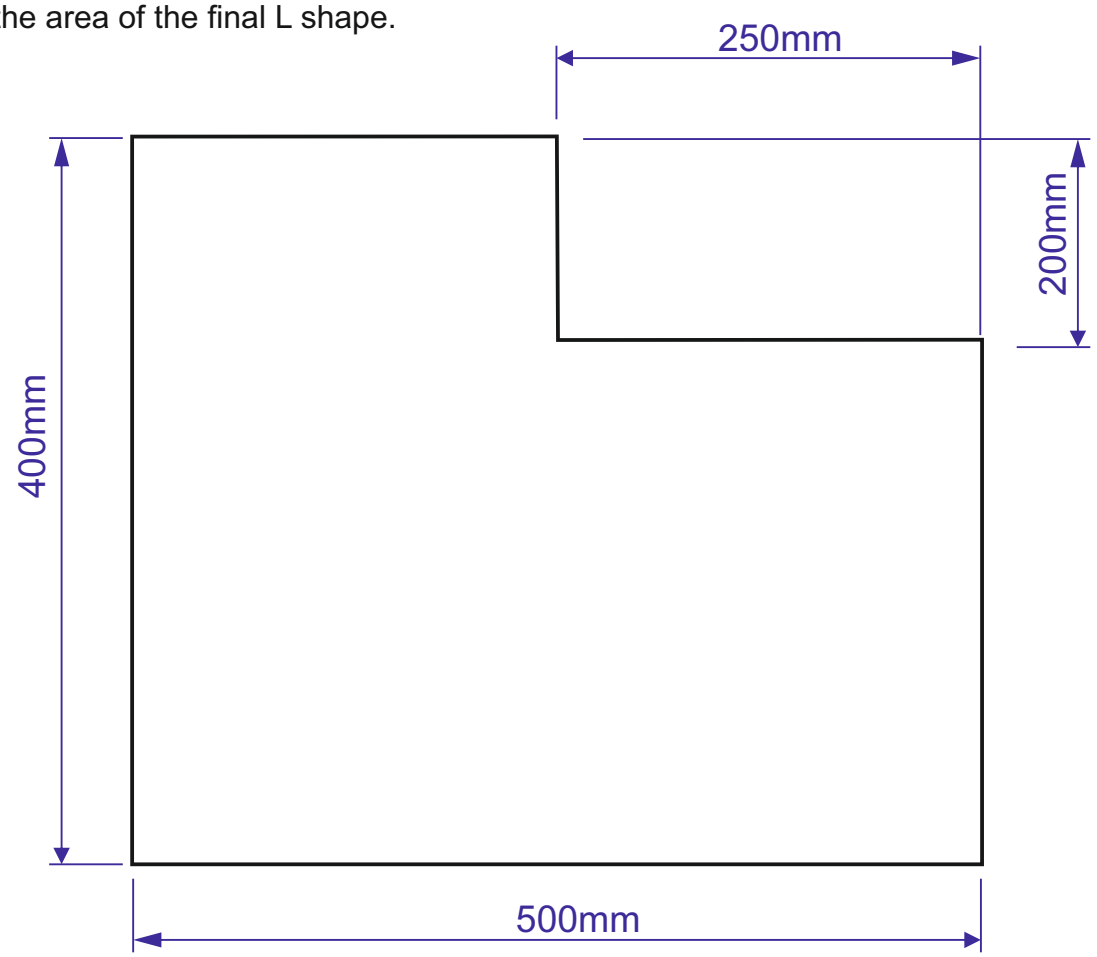
AREA OF FINAL SHAPED PIECE IS 150000mm²

AREA OF A RECTANGLE - EXAMINATION QUESTION

An acrylic panel for a storage unit is seen below.

1. Calculate the area of the acrylic required, before it is cut to shape (the overall rectangle of acrylic required, before it is cut to an L shape).

2. Calculate the area of the final L shape.

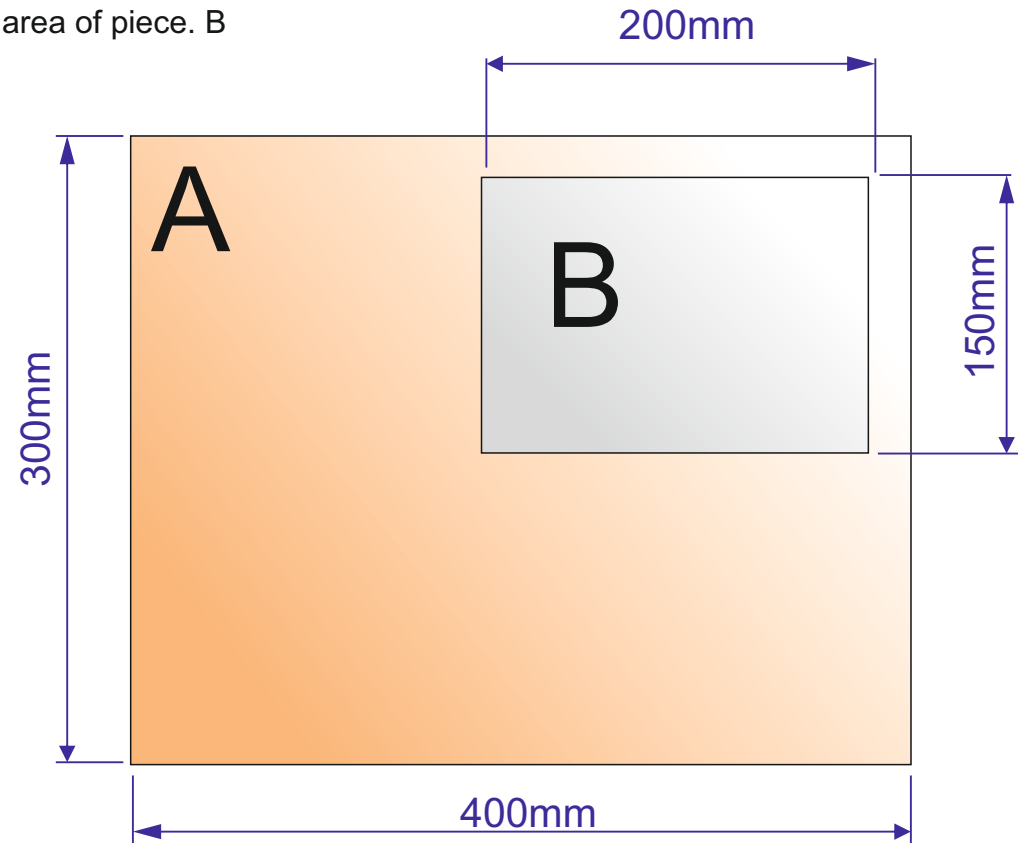


AREA OF A RECTANGLE - EXAMINATION QUESTION

A rectangular acrylic window for an Art project seen below, is composed of two rectangular pieces, accurately cut to size on a laser cutter. They fit perfectly together.

1. Calculate the area of piece A

2. Calculate the area of piece. B



First, calculate the entire area of 'A', without the smaller piece being removed, by treating it as a rectangle 400mm x 300mm.

AREA = LENGTH X HEIGHT
AREA = 400 X 300
AREA = 120000mm²

Now, calculate the area of the smaller rectangular piece 'B', *which is also the size of the piece to be removed from 'A'.*

AREA = LENGTH X HEIGHT
AREA = 200 X 150
AREA = 30000mm²

Now subtract the smaller rectangular area 'B' from the total area of rectangle 'A'. The answer will be the area of 'A', with the smaller rectangle of waste acrylic being removed.

120000 - 30000 = 90000mm²

AREA OF FINAL SHAPED PIECE 'A' WITHOUT THE SMALLER PIECE IS 90000mm²

AREA OF PIECE 'B' IS 30000mm²

AREA OF A RECTANGLE - EXAMINATION QUESTION

A rectangular acrylic window for an Art project seen below, is composed of two rectangular pieces, accurately cut to size on a laser cutter. They fit perfectly together.

1. Calculate the area of piece A

2. Calculate the area of piece. B