**Set up**

Draw four 6cm by 8cm rectangles on coloured card and cut them out.

What is the area of one of the rectangles? Stick one in your book, label its dimensions. Write down its area – and write down your reasoning. Remember to use the correct units!

**Triangles**

Take a second rectangle. Draw a line from top left to bottom right. Cut along this line so that you have two triangular pieces of card.

Stick one of the triangles into your book (using the 8cm side as the base) and label its dimensions.

Place the other triangle on top of the first so that they overlay each other exactly. What must the area of one triangle be? Write down your answer – and write down your reasoning.

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Take a third rectangle. Pick any point along the top edge. Draw a line joining this point to the bottom left. Draw another line from this point to the bottom right. Cut along these lines so that you have one large triangle and two smaller ones.

Stick the large triangle into your book (using the 8cm side as the base) and label its dimensions. Note that you know the exact height of the triangle, but not the sloping lengths.

Overlay the two cut pieces so that they fit exactly on top of the larger triangle. What must the area of the large triangle be? Write down your answer – and write down your reasoning.

Deduce a formula for area of triangle.

**Parallelograms**

Take the final rectangle. Pick any point along the top edge. Join this point to the bottom left and cut off the triangle. Place this triangle on the right hand side to form a parallelogram.

Stick the parallelogram into your book (using the 8cm side as the base) and label its dimensions. Again, you know the exact height of the parallelogram, but not the sloping lengths.

What must the area of the parallelogram be? Write down your answer – and write down your reasoning.

Deduce formula for the area of parallelogram.

Use your formula for the area of a parallelogram to deduce a formula for area of an obtuse-angled triangle. Write down your reasoning.