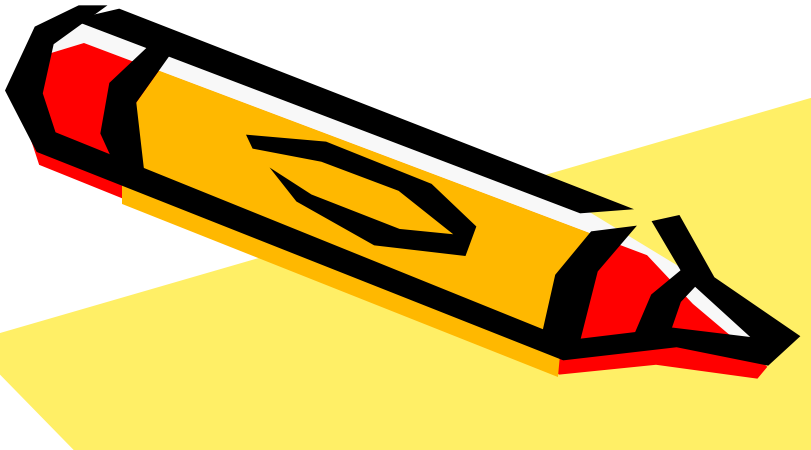
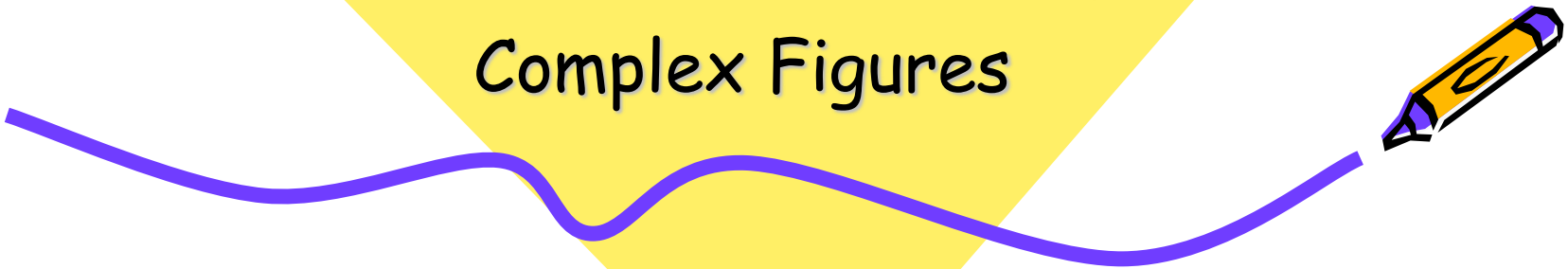


Geometry

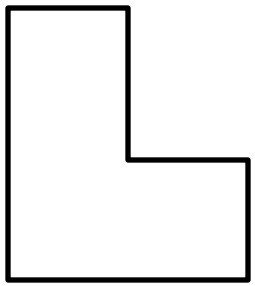
Area and Perimeter of Complex Figures

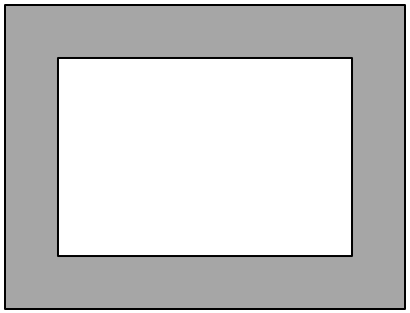


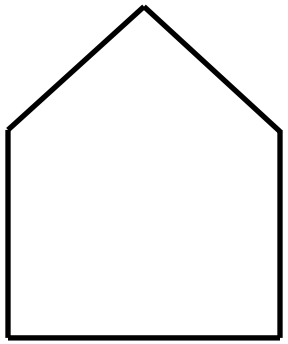
Complex Figures

The phrase complex figures is intended to refer to those figures that require more than one calculation to determine the required measurement.

For example:

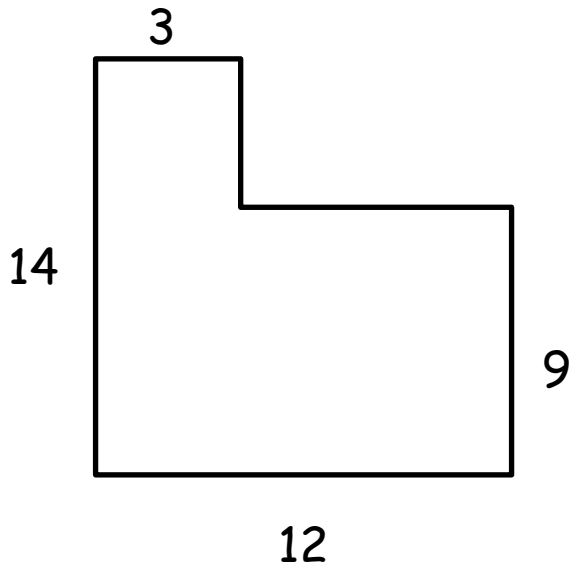




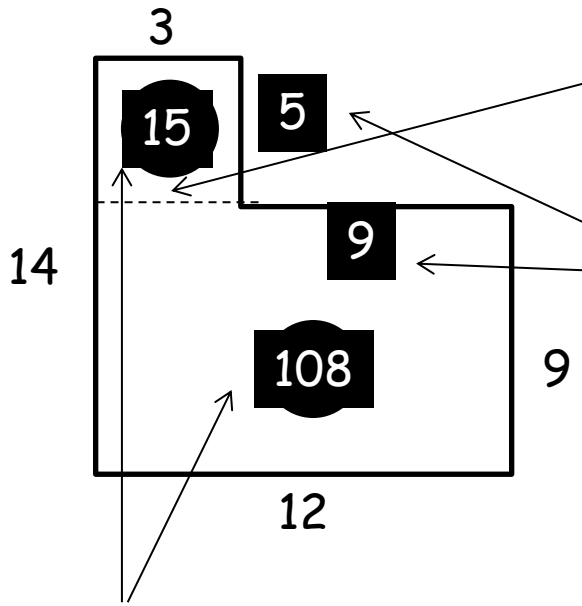


Complex Figures

In some cases, we can split the figure into non-overlapping sections, and add the areas of each for the total. We must transpose measurements across the figure.



Complex Figures



1) Split the figure into smaller, manageable figures

2) Transpose measurements as needed. 14-9=5. 12-3=9

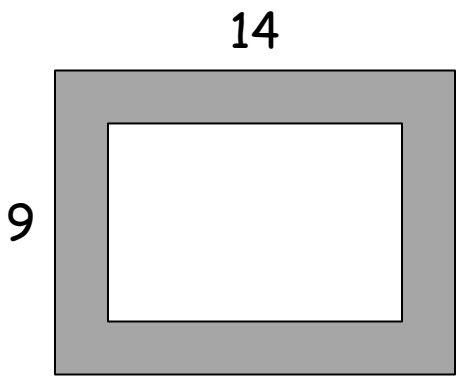
3) Find the area of each section, and total them.

4) 15 + 108 = <u>123 units squared</u>

Use transposed measurements to help determine the perimeter. 12+14+3+5+9+9=52

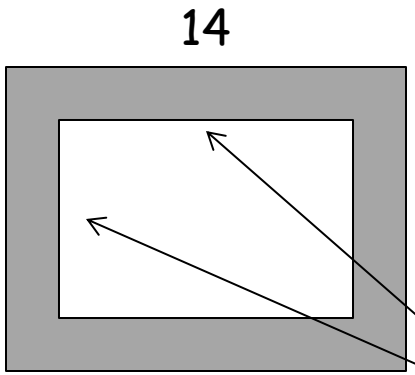
Complex Figures

For shaded region style questions, work from the outside in. Add or subtract each figure based on whether it is shaded or not. Think of it as having the figure and then cutting out a section.



The frame has a uniform border of 2. find the area of the shaded region.

Complex Figures



The frame has a uniform border of 2. find the area of the shaded region.

The plan: outside rectangle – inside rectangle

9 * 14 — 126

5 * 10 — 50

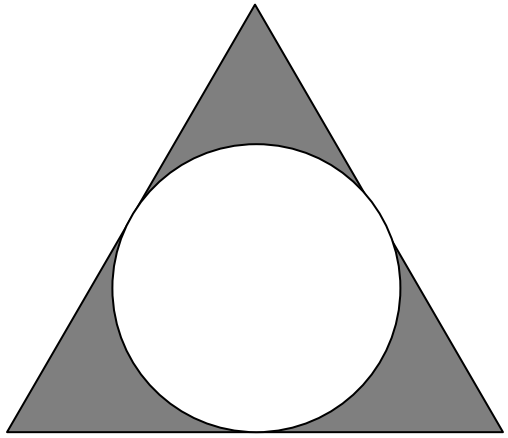
9 – (top and bottom border of 2 each) = 5

14 – (top and bottom border of 2 each) = 10

126 – 50

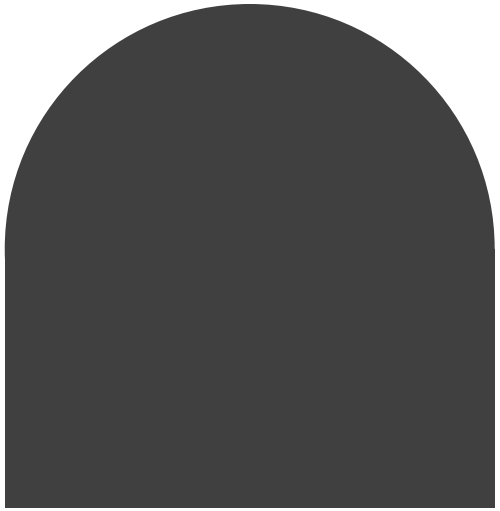
76 units squared

Complex Figures



The plan:

are of the shaded region =
outside triangle – inside circle



The plan:

area = rectangle + half circle

perimeter =
3 sides of rectangle + length of semicircle