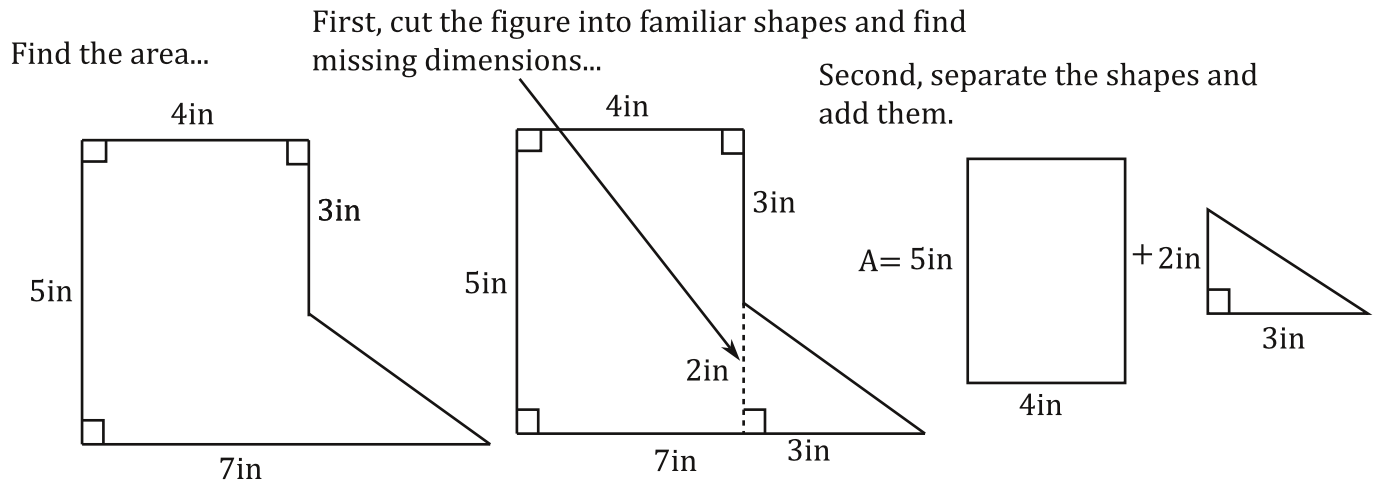# Compound Area Problems

Some shapes don't have a neat little formula.

Sometimes you might encounter an odd shape, like a doughnut or an "L-Shape" or something even weirder and stranger. By the way, don't talk to strangers... Anyway, what you can do is use some of the shapes and formulas you know and either add them together (additive) or subtract one or more from another (subtractive.) Let's take a look at an example of each...

Additive.

Find the area...

First, cut the figure into familiar shapes and find missing dimensions...

Second, separate the shapes and add them.

4in    4in

3in    3in

A= 5in    + 2in

5in    5in

2in

7in    7in    3in    4in    3in

Third, find the area of each shape....

$$A=\begin{matrix} bh \\ 4*5 \\ 20in^2 \end{matrix} + \begin{matrix} 1/2bh \\ 1/2(2*3) \\ 3in^2 \end{matrix}$$

Last, add the areas... $A=20in^2+3in^2=23in^2$

When you actually do the problems you cut the figures up right on the original, but you will have to draw out the separate pieces and show the formulas for their areas... Let's look at some subtractive...

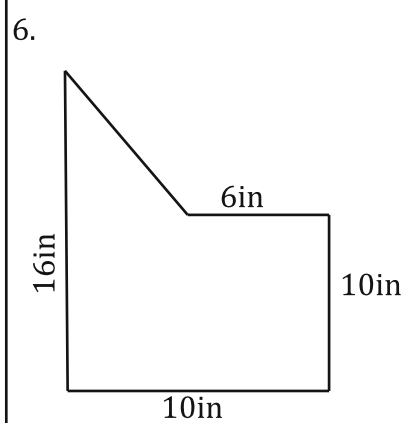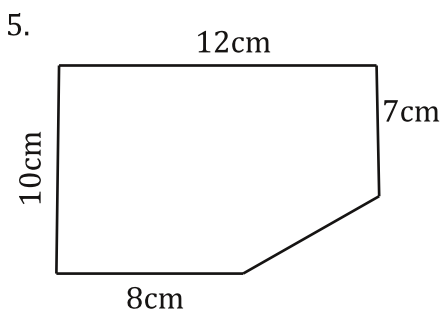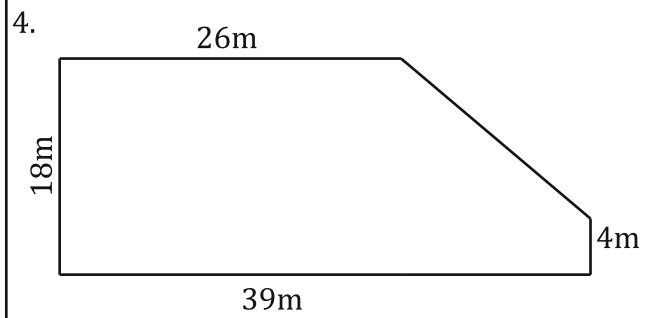Subtractive.
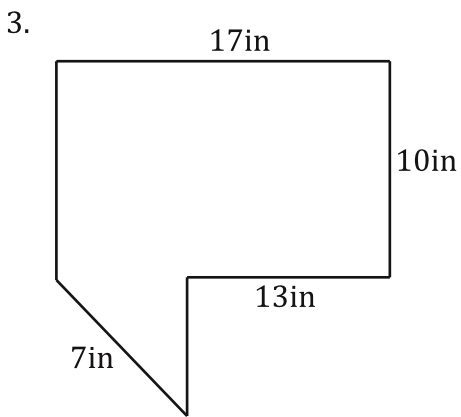
First, find the area of the shaded region...
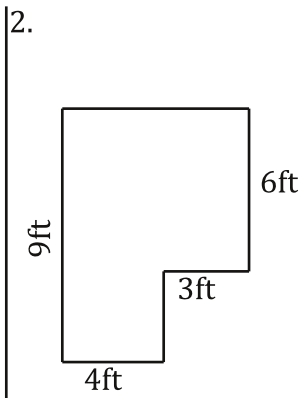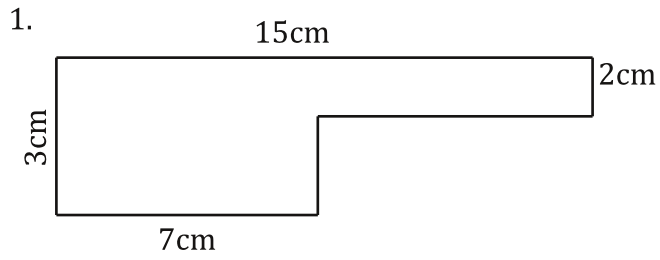
2cm
2cm    3cm

A=

3cm    —    2cm

3cm    2cm
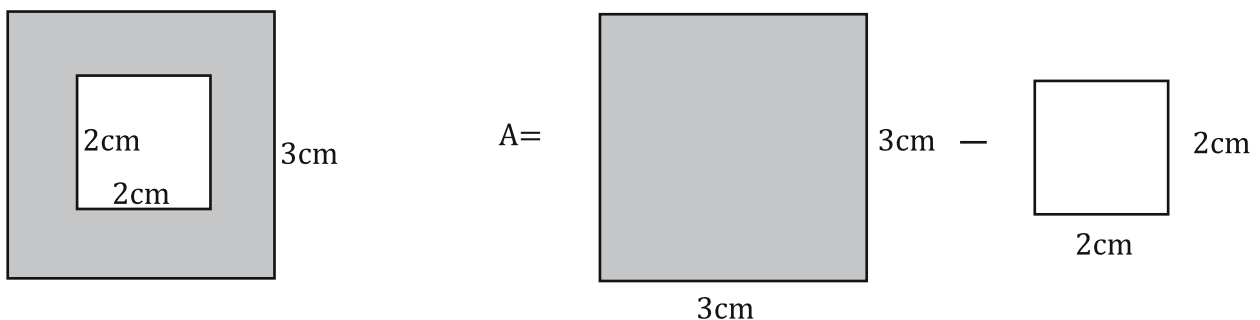
Second, Find the area of each shape.

$$A=\begin{matrix} bh \\ 3*3 \\ 9cm^2 \end{matrix} - \begin{matrix} bh \\ 2*2 \\ 4cm^2 \end{matrix}$$

Last, subtract the areas... $A=9cm^2-4cm^2=5cm^2$

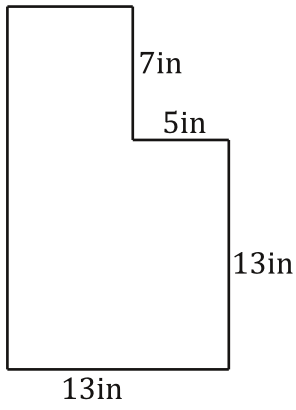Sometimes you might have to do both on the same shape. Are you ready? Let's practice...
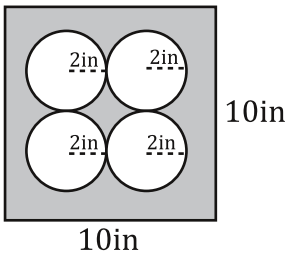
Find the area of each shape...

1.

15cm

3cm

2cm

7cm

2.

9ft

6ft

3ft

4ft

3.

17in

10in

13in

7in

4.

26m

18m

4m

39m

5.

12cm

7cm

10cm

8cm

6.

16in

6in

10in

10in

Bubble all the correct answers from above.  Don't bubble incorrect answers.

○ 54      ○ 11.36   ○ 78    ○ 114    ○ 77    ○ 112    ○ 611    ○ 632    ○ 37    ○ 181.48

7.

7in

5in

13in

13in

8. Find the shaded area.

4in
15in
7in

19in

9. Find the shaded area.

2in  2in
10in
2in  2in

10in

10. Find the shaded area.

4in
4in
8in
18in

11. Find the shaded area.

32ft
16ft
4ft
6ft
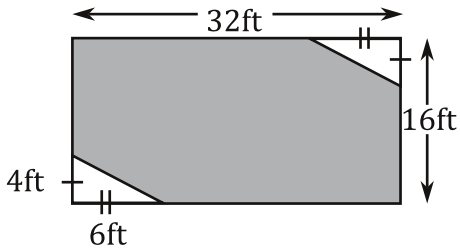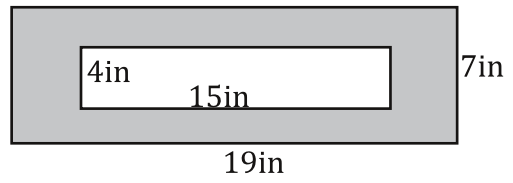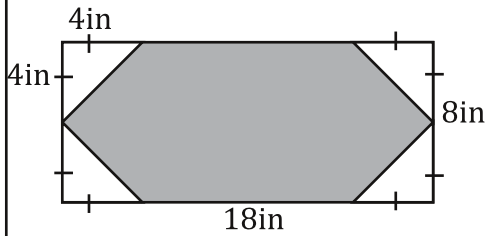
12. Find the shaded area.

13cm
8cm
3cm
4cm
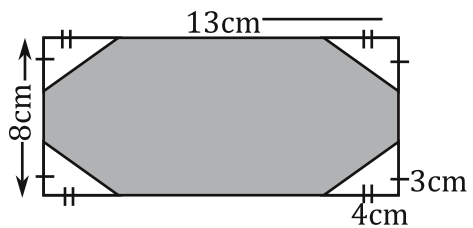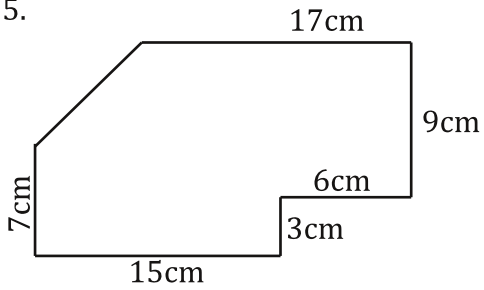
Bubble all the correct answers from above.  Don't bubble incorrect answers.

○ 436    ○ 80    ○ 59.72    ○ 58.38    ○ 112    ○ 488    ○ 225    ○ 73    ○ 76    ○ 123

13. Find the shaded area.

1cm
4cm
5cm
5cm

14.
8cm          8cm
6cm
13cm
5cm
18cm      2cm

15.
17cm
9cm
6cm
3cm
7cm
15cm

16.
21in
8in
10in
10in
8in
7in

17.
7in
15in   12in
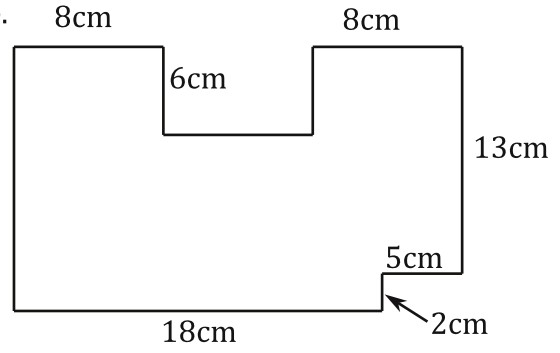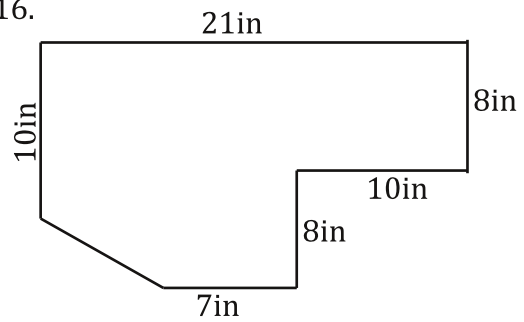20in
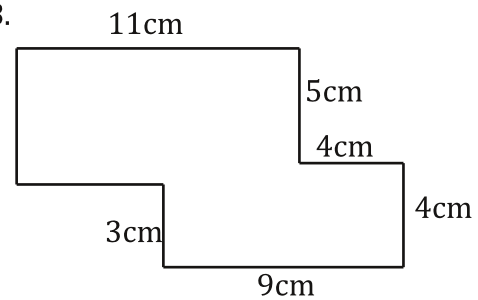4in

18.
11cm
5cm
4cm
4cm
3cm
9cm
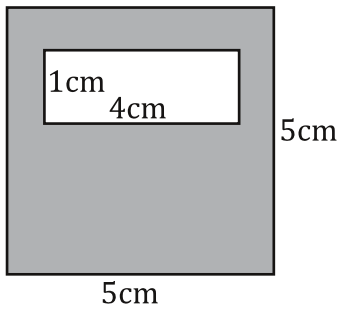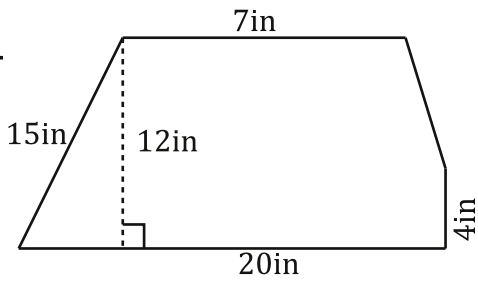
Bubble all the correct answers from above.  Don't bubble incorrect answers.

○244    ○256    ○160    ○97    ○170    ○215    ○224    ○293    ○306    ○21

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