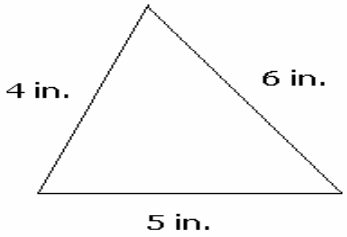
GEOMETRIC WORD PROBLEMS

Many geometric word problems are considerations of perimeter, area and volume. Sometimes it can be difficult to decide whether a word problem is asking for perimeter, area, or volume. Try to gesture with your hands to describe the problem:

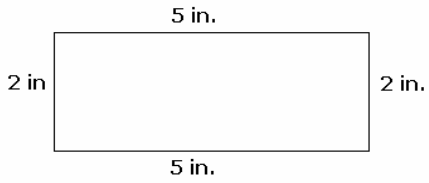
- Are you *pointing*? Then it's probably perimeter. (for circles it's circumference)
- Are you using *all* your fingers? Then it's probably area.
- Do your hands begin to move up, down and sideways? Then it's probably volume.

Perimeter Problems:

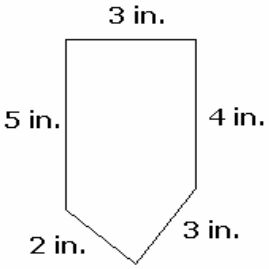
Measures of perimeter use *plus* signs. Fences, baseboards, molding, and measures of various edges are common in these word problems. You need a formula for circles ($C = 2\pi r$); however, most perimeters problems involve adding the measures of multiple straight sides.



$P = 4 + 5 + 6$
$P = 15$ in.



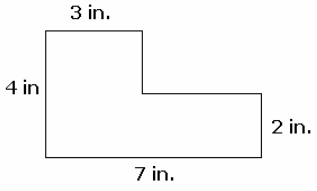
$P = 2 + 5 + 2 + 5$
$P = 14$ in.

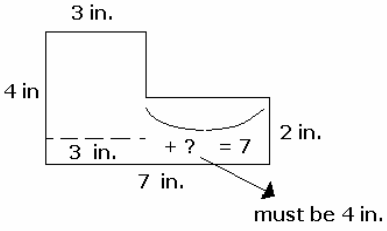


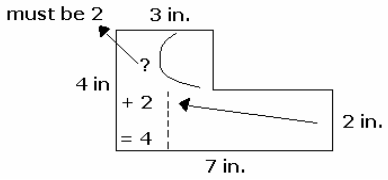
$P = 5 + 2 + 3 + 4 + 3$
$P = 17$ in.

Perimeters with Unlabeled Sides:

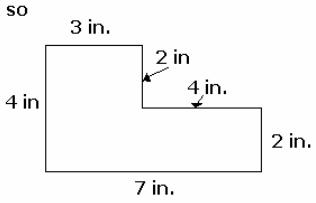
In some diagrams, not all the sides have measures shown. Do not guess these visually! We can usually determine the measures of these sides from the measures of the other sides. For example:







so



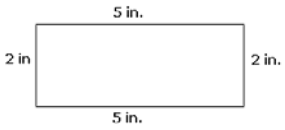
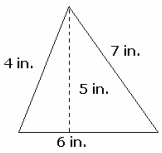
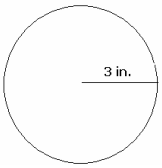
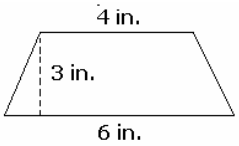
Now we can add the sides:

$P = 4 + 7 + 2 + 4 + 2 + 3 = 22$ in.

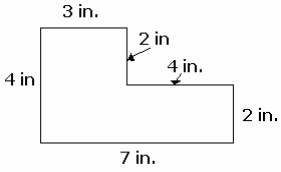
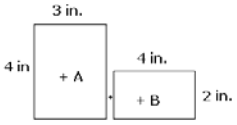
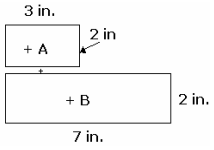
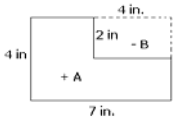
ctunstal@mtsac.edu 1/2006

Area Problems:

Measures of area do require use of a formula, and these must be memorized. Use index cards or some other memory strategy to memorize these or alternate forms of these:

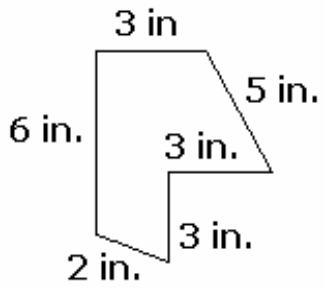
Rectangle/Square	Triangle	Circle	Trapezoid
$A = bh$	$A = \frac{b*h}{2}$	$A = \pi r^2$	$A = \frac{(B+b)}{2} * h$
			
$A = 5 * 2$	$A = \frac{6*5}{2}$	$A = \pi * 3^2$	$A = \frac{(6+4)}{2} * 3$
$A = 10 \text{ in.}^2$	$A = \frac{30}{2} = 15 \text{ in.}^2$	$A = 9\pi \approx 28.26 \text{ in}^2$	$A = \frac{10}{2} * 3 = 15 \text{ in}^2$

Areas of Unfamiliar Shapes:
Sometimes problems ask for the area of a shape, and we don't have a formula for that shape. In these cases, split the unfamiliar shape into familiar shapes. There often can be more than one way to do this, but if the answers will be the same. For example:

This shape:	Can become	or	or even
			
In each case the area:	Area = (4*3) + (4*2) Area = 12 + 8	Area = (3*2) + (7*2) Area = 6 + 14	Area = (4*7) – (4*2) Area = 28 – 8
Is the same amount:	Area = **20 in^2**	Area = **20 in^2**	Area = **20 in^2**

ctunstal@mtsac.edu 1/2006

Geometry Word Problems
Practice Page

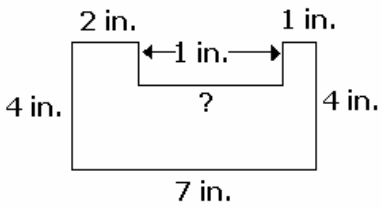


1. Can you figure out the perimeter of this? _____
2. Can you figure out the area of this? _____
3. What operation(s) will you use to figure out the perimeter?

   add subtract multiple divide formula all of these

Show how you would solve this:

4. The perimeter is _____ inches.



5. Can you figure out the perimeter of this? _____
6. Can you figure out the area of this? _____
7. Show how you will figure the measure of the ? side:

8. Show how you would figure the perimeter:
9. The perimeter is _____ inches.

---

10. What operation(s) will you use to figure out this area? add subtract multiple divide formula
11. Which way will you break this into familiar shapes? Draw those shapes.

!2. What is the area of each shape? Show your work.

13. Will you add them, subtract them, or both? Show your work.

14. The area of this shape is _____ $in.^2$

ctunstal@mtsac.edu 1/2006