Unit 33 Measuring Perimeter and Circumference

1. Perimeter

A. **Perimeter** refers to the distance around an object.
   The perimeter of a circle is called **circumference**.

B. Important quantities for a polygon are the length (l),
   width (w), base (b), and side (s) of the object.

C. These are the important quantities for a circle.

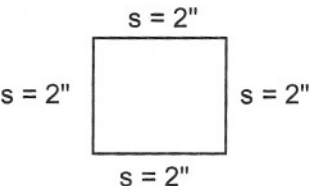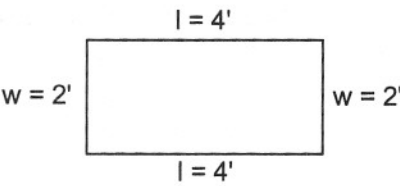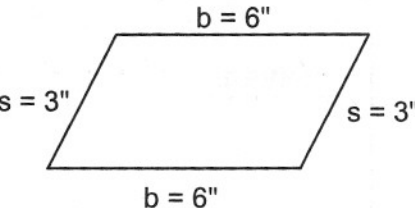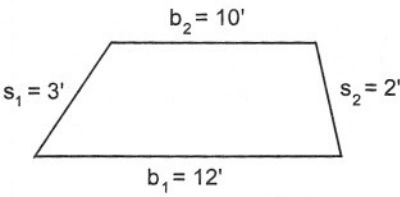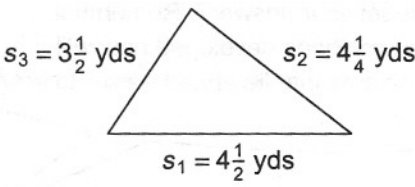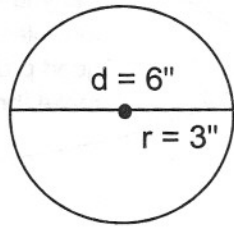   1. **The diameter (d)** is a line segment passing through the center
      of the circle and connecting two points on the circle.

   2. **The radius (r)** is a line segment joining the center of the circle with a point on the circle.

   3. **Pi** (pronounced pie) is the number of
      diameters in the circumference of all circles. $\boxed{\pi = \frac{22}{7} \approx 3.14}$

2. Examples:

Square	Rectangle	Parallelogram
Unknown: Perimeter	**Unknown:** Perimeter	**Unknown:** Perimeter
Formula: $P = s + s + s + s$ $= 2 + 2 + 2 + 2$ $= 8$ inches	**Formula:** $P = l + w + l + w$ $= 4 + 2 + 4 + 2$ $= 12$ feet	**Formula:** $P = b + s + b + s$ $= 6 + 3 + 6 + 3$ $= 18$ inches

Trapezoid	Triangle	Circle
Unknown: Perimeter	**Unknown:** Perimeter	**Unknown:** Circumference
Formula: $P = b_1 + s_1 + b_2 + s_2$ $= 12 + 3 + 10 + 2$ $= 27$ feet **Note:** Subscripts are used when more than one variable has the same name. s_1 means side 1 and s_2 means side 2.	**Formula:** $P = s_1 + s_2 + s_3$ $= 4\frac{1}{2} + 4\frac{1}{4} + 3\frac{1}{2}$ $= 4\frac{2}{4} + 4\frac{1}{4} + 3\frac{2}{4}$ $= 11\frac{5}{4}$ $= 12\frac{1}{4}$ yards	**Formula:** $C = \pi d$ or $C = 2\pi r$ $C = \pi d$ $\approx 3.14(6)$ ≈ 18.84 inches $C = 2\pi r$ $\approx 2(3.14)(3)$ ≈ 18.84 inches