**Section 1–4B: Geometric Word Problems**

**Geometry Review:**

* The area of rectangle is: $l∙w$
* The perimeter of rectangle is: $2l+2w$
* All angles of a triangle must equal to 180o.
* Two angles are **complementary** if the sum of their measures is 90o.
* Two angles are **supplementary** if the sum of their measures is 180o.

**Example 1:**

Find 2 complementary angles if one is 24o less than twice the other.

**1. Relate:** Angle 1 Plus Angle 2 Equals Complementary Angles

**2. Define:** Let Angle 1 $= x$

 Then Angle 2 $= 2x-24°$

**3. Write:** $x+\left(2x-24°\right)=90°$

**4. Solve:** $x+\left(2x-24°\right)=90°$

 $3x-24°=90°$

$3x=114°$

$x=38°$

**5. Result:** Angle 1 $=38°$

Angle 2 $=2\left(38°\right)-24°$

 $=76°-24°$

$=52°$

**6. Check:** $38°+\left(2\left(38°\right)-24°\right)$ = $90°$

$ 38°+\left(76°-24°\right)$ = $90°$

 $ 38°+52°$ = $90°$

 $90°$ = $90° √$

**Example 2:**

The length of a rectangle is 10 feet more than the twice the width. Find the dimensions if the perimeter is 62 feet.

**1. Relate:** 2$ ∙ $Length Plus 2$ ∙ $Width Equals Perimeter

**2. Define:** Let Length $= 2x+10$

 Then Width $= x$

**3. Write:** $2(2x+10)+2(x)=62$

**4. Solve:** $2(2x+10)+2(x)=62$

 $4x+20+2x=62$

$6x+20=62$

 $6x=42$

$x=7$

**5. Result:** Length $=2\left(7\right)+10$

 $=14+10$

$$=24feet$$

Width $=7feeet$

**6. Check:** $ 2(2x+10)+2(x)$ = $62$

$ 2(2(7)+10)+2(7)$ = $62$

$ 2(14+10)+14$ = $62$

$ 2(24)+14$ = $62$

 $ 48+14$ = $62$

$ 62$ = $62 √$