Resolving Forces

**Angle**

What if an applied force is at an angle above the horizontal?

- Fn
- F_app
- F_y
- F_x
- Fn < F_y
- F_n = F_y
- \( F_y = 75 \text{ kg}(9.8 \text{ m/s}^2) = 735 \text{ N} \)
- F_y = F_n = 735 \text{ N}

**Calculating F_y and F_n**

1. **Without angles (Practice #1)**
   a. Draw the Free-Body Diagram
   b. Label forces
   c. Place mass inside box
   d. Calculate \( F_y = m \times g \)
      - Mass multiplied by 9.8 m/s^2
   e. Determine F_n
      a. Net force = 0
      b. Therefore \( F_y = F_n \)

2. **With angles (Practice #2)**
   a. Draw the Free-Body Diagram
   b. Include force at angle
   c. Calculate \( F_y = m \times g \)
      - Mass multiplied by 9.8 m/s^2
   d. Calculate components of force at an angle
   e. Redraw diagram with components (no forces of angles)
   f. Calculate Fn
      \[ F_n + F_x = F_y \]
      \[ F_n + 3.4 \times 933 \text{ N} = 333 \text{ N} \]