**Problem 2: Batter Up**

*BingBATaBoom.Inc* manufactures two different quality wood baseball bats, the *Battlefield* and the *Dingbat*. The Battlefield takes 8 hours to trim and turn and 2 hours to finish it. It has a profit of $17. The Dingbat takes 5 hours to trim and turn and 5 hours to finish, but its profit is $29. The total time per day available for trimming and turning is 80 hours and for finishing is 50 hours. How many of each type of bat should be produced to have the maximum profit? What is this maximum profit?

**Variables** (*in words*): $x$ = Battlefield $y$ = Dingbat

**Constraints:**

Finishing: $50 \geq 2x + 5y$

trimming + turning: $8x + 5y \leq 80$

$x \geq 0$

$y \geq 0$

Finish: $y \leq -\frac{2}{5}x + 10$

T+T: $y \leq -\frac{8}{5}x + 16$

**Objective Function:**

$P = 17x + 29y$

**Vertices: of Feasible Region:**

(0,10) (10,0)

(5,8)

(0,0)

**Ordered Pair of Optimal Solution:**

$P = 17(5) + 29(8)$

**(5,8)**

**Maximum Profit:**

$317.00