

Linear Programming, Geometric solution - Product mix and sensitivity analysis

The Wrong Brothers airplane company makes single engine and dual engine planes. The 3 most limiting resources are engines, labor, and Global Positioning System instruments (GPS). Profits are \$10K for a single engine plane, and \$25K for a dual engine plane. A single engine plane requires one engine. A dual engine plane requires (guess what?) two engines. Labor used is 1.5 man-years per single engine plane and 2 man-years for each dual engine plane. Each plane has 1 GPS. Wrong Brothers has 100 engines, 75 GPS's and 150 man-years of labor.

A) Formulate a linear programming model to determine how many of each plane to make to maximize total profit.