

PRIMAL LINEAR PROGRAMMING PROBLEM - MATH 465 11/12/2007

MAX $5X_1+8X_2$
 S.T.
 1) $1X_1+2X_2<5$
 2) $3X_1+4X_2<12$

OPTIMAL SOLUTION
 Objective Function Value = 22.000

| Variable | Value | Reduced Costs |
|----------|-------|---------------|
| X1 | 2.000 | 0.000 |
| X2 | 1.500 | 0.000 |

| Constraint | Slack/Surplus | Dual Prices |
|------------|---------------|-------------|
| 1 | 0.000 | 2.000 |
| 2 | 0.000 | 1.000 |

OBJECTIVE COEFFICIENT RANGES

| Variable | Lower Limit | Current Value | Upper Limit |
|----------|-------------|---------------|-------------|
| X1 | 4.000 | 5.000 | 6.000 |
| X2 | 6.667 | 8.000 | 10.000 |

RIGHT HAND SIDE RANGES

| Constraint | Lower Limit | Current Value | Upper Limit |
|------------|-------------|---------------|-------------|
| 1 | 4.000 | 5.000 | 6.000 |
| 2 | 10.000 | 12.000 | 15.000 |

DUAL LINEAR PROGRAMMING PROBLEM

MIN $5X_1+12X_2$
 S.T.
 1) $1X_1+3X_2>5$
 2) $2X_1+4X_2>8$

OPTIMAL SOLUTION
 Objective Function Value = 22.000

| Variable | Value | Reduced Costs |
|----------|-------|---------------|
| X1 | 2.000 | 0.000 |
| X2 | 1.000 | 0.000 |

| Constraint | Slack/Surplus | Dual Prices |
|------------|---------------|-------------|
| 1 | 0.000 | -2.000 |
| 2 | 0.000 | -1.500 |

OBJECTIVE COEFFICIENT RANGES

| Variable | Lower Limit | Current Value | Upper Limit |
|----------|-------------|---------------|-------------|
| X1 | 4.000 | 5.000 | 6.000 |
| X2 | 10.000 | 12.000 | 15.000 |

RIGHT HAND SIDE RANGES

| Constraint | Lower Limit | Current Value | Upper Limit |
|------------|-------------|---------------|-------------|
| 1 | 4.000 | 5.000 | 6.000 |
| 2 | 6.667 | 8.000 | 10.000 |