

REFERENCES USED

IN REFERENCE TO Q1

/* DM1: Objective function */

max: $14000 x_1 + 3500 x_2$;

/* Constraints */

$14000 x_1 + 3500 x_2 - 150 y_1 - 200 y_2 \leq 0$;
 $14000 x_1 + 21000 x_2 - 400 y_1 - 700 y_2 \leq 0$;
 $42000 x_1 + 10500 x_2 - 320 y_1 - 1200 y_2 \leq 0$;
 $28000 x_1 + 42000 x_2 - 520 y_1 - 2000 y_2 \leq 0$;
 $19000 x_1 + 25000 x_2 - 350 y_1 - 1200 y_2 \leq 0$;
 $14000 x_1 + 15000 x_2 - 320 y_1 - 700 y_2 \leq 0$;
 $150 y_1 + 200 y_2 = 1$;

/* DM2: Objective function */

max: $14000 x_1 + 21000 x_2$;

/* Constraints */

$14000 x_1 + 3500 x_2 - 150 y_1 - 200 y_2 \leq 0$;
 $14000 x_1 + 21000 x_2 - 400 y_1 - 700 y_2 \leq 0$;
 $42000 x_1 + 10500 x_2 - 320 y_1 - 1200 y_2 \leq 0$;
 $28000 x_1 + 42000 x_2 - 520 y_1 - 2000 y_2 \leq 0$;
 $19000 x_1 + 25000 x_2 - 350 y_1 - 1200 y_2 \leq 0$;
 $14000 x_1 + 15000 x_2 - 320 y_1 - 700 y_2 \leq 0$;
 $400 y_1 + 700 y_2 = 1$;

/* DM3: Objective function */

max: $42000 x_1 + 10500 x_2$;

/* Constraints */

$14000 x_1 + 3500 x_2 - 150 y_1 - 200 y_2 \leq 0$;
 $14000 x_1 + 21000 x_2 - 400 y_1 - 700 y_2 \leq 0$;
 $42000 x_1 + 10500 x_2 - 320 y_1 - 1200 y_2 \leq 0$;
 $28000 x_1 + 42000 x_2 - 520 y_1 - 2000 y_2 \leq 0$;

```
19000 x1 + 25000 x2 - 350 y1 - 1200 y2 <= 0;
14000 x1 + 15000 x2 - 320 y1 - 700 y2 <= 0;
320 y1 + 1200 y2 = 1;
```

```
/* DM4: Objective function */
```

```
max: 28000 x1 + 42000 x2;
```

```
/* Constraints */
```

```
14000 x1 + 3500 x2 - 150 y1 - 200 y2 <= 0;
14000 x1 + 21000 x2 - 400 y1 - 700 y2 <= 0;
42000 x1 + 10500 x2 - 320 y1 - 1200 y2 <= 0;
28000 x1 + 42000 x2 - 520 y1 - 2000 y2 <= 0;
19000 x1 + 25000 x2 - 350 y1 - 1200 y2 <= 0;
14000 x1 + 15000 x2 - 320 y1 - 700 y2 <= 0;
520 y1 + 2000 y2 = 1;
```

```
/* DM5: Objective function */
```

```
max: 19000 x1 + 25000 x2;
```

```
/* Constraints */
```

```
14000 x1 + 3500 x2 - 150 y1 - 200 y2 <= 0;
14000 x1 + 21000 x2 - 400 y1 - 700 y2 <= 0;
42000 x1 + 10500 x2 - 320 y1 - 1200 y2 <= 0;
28000 x1 + 42000 x2 - 520 y1 - 2000 y2 <= 0;
19000 x1 + 25000 x2 - 350 y1 - 1200 y2 <= 0;
14000 x1 + 15000 x2 - 320 y1 - 700 y2 <= 0;
350 y1 + 1200 y2 = 1;
```

```
/* DM6: Objective function */
```

```
max: 14000 x1 + 15000 x2;
```

```
/* Constraints */
```

```
14000 x1 + 3500 x2 - 150 y1 - 200 y2 <= 0;
14000 x1 + 21000 x2 - 400 y1 - 700 y2 <= 0;
42000 x1 + 10500 x2 - 320 y1 - 1200 y2 <= 0;
```

$28000 x_1 + 42000 x_2 - 520 y_1 - 2000 y_2 \leq 0;$
 $19000 x_1 + 25000 x_2 - 350 y_1 - 1200 y_2 \leq 0;$
 $14000 x_1 + 15000 x_2 - 320 y_1 - 700 y_2 \leq 0;$
 $320 y_1 + 700 y_2 = 1;$

IN REFERENCE OF Q2

/* Objective function */

max: $20 x_1 + 15 x_2 + 25 x_3 - 6 y_{1P} - 6 y_{1N} - 3 y_{2N};$

/* Constraints */

$6 x_1 + 4 x_2 + 5 x_3 - y_{1P} + y_{1N} = 50;$

$8 x_1 + 7 x_2 + 5 x_3 - y_{2P} + y_{2N} = 75;$