Model A (No Lagoon):

MAX 7.6XA+5.9XB S.T. XA, XB > 0 and
1) 1XA+1XB<200000
2) 1XA<100000
3) 2XA+1XB<250000

OPTIMAL SOLUTION: Objective Function Value = 1,265,000

Variable	Value	Reduced Costs
XA	50000.000	0.000
XB	150000.000	0.000

Constraint	Slack/Surplus	Dual Prices
1	0.000	4.200
2	50000.000	0.000
3	0.000	1.700

OBJECTIVE COEFFICIENT RANGES

Variable	Lower Limit	Current Value	Upper Limit
XA	5.900	7.600	11.800
XB	3.800	5.900	7.600

RIGHT HAND SIDE RANGES

Constraint	Lower Limit	Current Value	Upper Limit
1	150000.000	200000.000	250000.000
2	50000.000	100000.000	No Upper Limit
3	200000.000	250000.000	300000.000

Model B (Lagoon):

MAX 10XA+7XB S.T. XA, XB > 0 and
1) 1XA+1XB<200000
2) 1XA<100000
3) 2XA+1XB<250000

OPTIMAL SOLUTION: Objective Function Value = 1,550,000
So, in this case our profit is 1550000 - 300000 = 1,250,000.

Variable	Value	Reduced Costs
XA	50000.000	0.000
XB	150000.000	0.000

Constraint	Slack/Surplus	Dual Prices
1	0.000	4.000
2	50000.000	0.000
3	0.000	3.000

OBJECTIVE COEFFICIENT RANGES

Variable	Lower Limit	Current Value	Upper Limit
XA	7.000	10.000	14.000
XB	5.000	7.000	10.000

RIGHT HAND SIDE RANGES

Constraint	Lower Limit	Current Value	Upper Limit
1	150000.000	200000.000	250000.000
2	50000.000	100000.000	No Upper Limit
3	200000.000	250000.000	300000.000

Model C:

MAX 6.6XA0+7.2XA1+7.6XA2+7.6XA3+4.8XB0+5.6XB1+5.9XB2+5.7XB3 S.T. XAi, XBi > 0
1) 1XA0+1XA1+1XA2+1XA3+1XB0+1XB1+1XB2+1XB3<200000
2) 1XA0+1XA1+1XA2+1XA3<100000
3) 2XA0+2XA1+2XA2+2XA3+1XB0+1XB1+1XB2+1XB3<250000

OPTIMAL SOLUTION: Objective Function Value = 1,265,000

Variable	Value	Reduced Costs
XA0	0.000	1.000
XA1	0.000	0.400
XA2	50000.000	0.000
XA3	0.000	0.000
XB0	0.000	1.100
XB1	0.000	0.300
XB2	150000.000	0.000
XB3	0.000	0.200

Constraint	Slack/Surplus	Dual Prices
1	0.000	4.200
2	50000.000	0.000
3	0.000	1.700

OBJECTIVE COEFFICIENT RANGES

Variable	Lower Limit	Current Value	Upper Limit
XA0	No Lower Limit	6.600	7.600
XA1	No Lower Limit	7.200	7.600
XA2	7.600	7.600	11.800
XA3	No Lower Limit	7.600	7.600
XB0	No Lower Limit	4.800	5.900
XB1	No Lower Limit	5.600	5.900
XB2	5.700	5.900	7.600
XB3	No Lower Limit	5.700	5.900

RIGHT HAND SIDE RANGES

Constraint	Lower Limit	Current Value	Upper Limit
1	150000.000	200000.000	250000.000
2	50000.000	100000.000	No Upper Limit
3	200000.000	250000.000	300000.000

Dual of Model A:

MIN 200000X1 + 100000X2 + 250000X3 S.T. X1, X2, X3 > 0 and
1X1 + 1X2 + 2X3 > 7.60
1X1 + 1X3 > 5.90

OPTIMAL SOLUTION: Objective Function Value = 1,265,000

Variable	Value	Reduced Costs
X1	4.200	0.000
X2	0.000	50000.000
X3	1.700	0.000

Constraint	Slack/Surplus	Dual Prices
1	0.000	-50000.000
2	0.000	-150000.000

OBJECTIVE COEFFICIENT RANGES

Variable	Lower Limit	Current Value	Upper Limit
X1	150000.000	200000.000	250000.000
X2	50000.000	100000.000	No Upper Limit
X3	200000.000	250000.000	300000.000

RIGHT HAND SIDE RANGES

Constraint	Lower Limit	Current Value	Upper Limit
1	5.900	7.600	11.800
2	3.800	5.900	7.600