1. D

2. Let \( x = \) the number of luxury models produced
   Let \( y = \) the number of standard models produced
   
   \[
   \text{Maximize:} \quad P = 40x + 30y \\
   \text{Subject to:} \quad 10x + 16y \leq 6000 \\
   \quad 10x + 8y \leq 3600 \\
   \quad x, y \geq 0
   \]

3. D

4. A

5. D (that is corner point E)

6. C

7. C

8. A

9. C

10. C

11. Solve \( 7500 = P(1 + i)^{216} \) for \( P \), where \( i = 0.0325/12 = 0.0027083333 \)
    This gives \( P = 41815.99 \), so Kelly and Lisa need to deposit \$41,815.99\ now.

12i. \( 750000 \times \frac{1.04^{20} - 1}{0.04} = 22333558.93 \)
    So deposits grow to \$22,333,558.93\.

12ii. \( 10000000 \times 1.04^{20} = 21911231.43 \)
    So the \$10\ million grows to \$21,911,231.43\.

12iii. A

13. Since 6\% compounded monthly = .005 per month, we need to solve
    \[
    500 \times \frac{1.005^{60} - 1}{0.005} = P \times 1.005^{60}
    \]
    for \( P \). Dividing both sides by \( 1.005^{60} \), we get \( P = 25,862.78. \)

14. C

15. The interest per month is 0.006875
    The responses are: \$1261.18; \$888.68; \$372.50; \$128,890.11