1. T (n) = 3T (n/2) + n
   * a = 3
   * b=2
   * d=1
     + b^d
     + 2^1
   * Hence 3 > 2 therefore a > b^d Rule three of Master Theorem applies
   * Hence time complexity in Θ form would be
   * Answer: Θ (n^Log2[base 3])
2. T (n) = 64T (n/8) − n^2(log n)
   * a = 64
   * b=8
   * d=2
     + b^d
     + 8^2
   * Hence 64 = 64 therefore a = b^d Rule two of Master Theorem applies
   * Hence time complexity in Θ form would be
   * Answer: Θ (n^2 log n)
3. T (n) = 2nT (n/2) + n^n
   * a = 2n
   * b=2
   * d=n
     + b^d
     + 2^n
   * Hence a <= b^d
     + When a = b^d (when n = 1 and n = 2)
       - Rule two of Master Theorem applies when n =1 and 2
       - Hence time complexity in Θ form would be
       - Answer : Θ (n^n log n)
     + When a < b (for n>2)
       - Rule one of Master Theorem applies when n =1 and 2
       - Hence time complexity in Θ form would be
       - Answer: Θ (n^n)
4. T (n) = 3T (n/3) + n/2
   * a = 3
   * b=3
   * d=1
     + b^d
     + 3^1
   * Hence 3 = 3 therefore a = b^d Rule two of Master Theorem applies
   * Hence time complexity in Θ form would be
   * Answer: Θ (n^1 Log n)
5. T (n) = 7T (n/3) + n^2
   * a = 7
   * b=3
   * d=2
     + b^d
     + 3^2
   * Hence 7 < 9 therefore a < b^d Rule one of Master Theorem applies
   * Hence time complexity in Θ form would be
   * Answer: Θ (n^2)