SUBSTITUTION

1. **Jun 82**
   Calculate the value of V in the formula
   \[ V = \pi^2 \left( \frac{R - r^2}{2} \right)^\frac{1}{3} (R + r) \]
   where \( R = 22.8, r = 7.50, \pi = 3.14 \) [7 marks]

2. **G June 92**
   Given that \( x = 2, y = -5, \) and \( z = 3, \) find the value of
   a. \( x - 2y \)
   b. \( xz^2 \)
   c. \( \frac{7x + 2z}{y} \) [5 marks]

3. **G Dec 92**
   Given that \( p = 2, q = -3, \) and \( r = -1, \) find the value of
   a. \( 5p - 2q \)
   b. \( pq + pr \)
   c. \( pr^2 \) [5 marks]

4. **Jun 94**
   Given that \( a = 4, b = -2, \) and \( c = 3, \) calculate the value of
   \[ \frac{a^2 - bc}{b + c} \] [2 marks]

5. **Jun 97**
   Given that \( m = -3, n = 2, \) and \( p = -1, \) find the value of
   \[ \frac{m(p - n)^2}{3p + m} \] [4 marks]

6. **Jan 00**
   If \( l = -2, n = -3, \) and \( m = 4, \) calculate the value of
   \[ \frac{m + nl}{n - m} \] [2 marks]

7. **Jan 92**
   Given that \( a = 4, b = -3, \) and \( c = 12, \) calculate the value of \( a^2(2b - c) \) [2 marks]

8. **Jun 96**
   Given that \( l = -2, m = 3, \) and \( n = 7, \) calculate the value of \( lm(m - n) \) [2 marks]

9. **Jan 98**
   Find the value of \( p, \) if 3 is a root of
   \[ 5x^2 - px - 18 = 0 \] [3 marks]

10. **Jan 02**
    If \( a = 4, b = -2 \) and, \( c = 3, \) calculate the value of
    \[ \frac{a(a - b)}{bc} \] [2 marks]

11. **June 03**
    Given that \( a = 2, b = -3, \) and \( c = 0, \) evaluate
    i. \( 4a - 2b + 3c \)
    ii. \( a^c \) [3 marks]

12. **Jan 04**
    If \( p = 5, q = 0, \) and \( r = -3, \) evaluate
    i. \( 4p - qr \)
    ii. \( 2r^3 \) [3 marks]

13. **Jan 05**
    Given that \( r = \frac{2p^2}{q - 3}, \) calculate the value of \( r \)