

- 3-3. Evaluate $f(3)$, given that $f(x) = \frac{2 - 7x^{-1} - 15x^{-2}}{4 - 19x^{-1} - 5x^{-2}}$. Ans: $\frac{9}{13}$
- 3-4. Given $f(x+1) = x^3 - 2x^2 + 8x - 11$, find $f(4)$. Ans: 22
- 3-5. x varies directly as y and inversely as the square of z . If $x = 8$ when $y = 4$ and $z = 17$, find y when $x = 4$ and $z = 11$. Ans: $\frac{242}{289}$
- 4-1. Find the sum of the solutions of the equation $125^{x^2+3x+10} = 25^{x^2-x}$. Ans: -11
- 4-2. Solve for x :
 $2v + w + x + y + z = 9$
 $v + 2w + x + y + z = 1$
 $v + w + 2x + y + z = 5$ Ans: -2
 $v + w + x + 2y + z = 20$
 $v + w + x + y + 2z = 7$
- 4-3. Simplify: $\frac{1}{\sqrt{2} + \sqrt{3}} + \frac{1}{\sqrt{3} + 2} + \frac{1}{2 + \sqrt{5}} + \frac{1}{\sqrt{5} + \sqrt{6}}$. Ans: $\sqrt{6} - \sqrt{2}$
- 4-4. Expand and simplify: $(1+2i)^8$. Ans: $-527 + 336i$
- 4-5. Given $f(x) = x^2 + 3x + 1$, $x \geq -\frac{3}{2}$. Find $f^{-1}(1)$. Ans: 0
- E-1. Katie traveled from Hoover to Atlanta at a constant speed of 60 mph. On the return trip she traveled at a constant speed of 75 mph. What is the average speed for her round trip? Ans: $66\frac{2}{3}$ mph
- E-2. Evaluate: $2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{2 + \frac{1}{\dots}}}}$ Ans: $1 + \sqrt{2}$
- E-3. In an arithmetic sequence, the 5th term is 60 and the 13th term is 127. Find the 29th term. Ans: 261