MATH
MONKS

Solving Systems of Three Equations by Substitution

Solve each system by substitution.

1. $5r + 4s - 6t = -24$
    $-2s + 2t = 0$
    $s - t = 2$

2. $4a + 5c + 4u = 49$
    $4a + 2c + 2u = 28$
    $4a + 3c + 6u = 45$

3. $x + 3y - 3z = 12$
    $3x - y + 4z = 0$
    $-x + 2y - z = 1$

4. $y = x + z + 5$
    $z = -3y - 3$
    $2x - y = -4$

5. $7a + 7b + 7c = 63$
    $-7a - 4b - 7c = 33$
    $-9a + 7b - 9c = -7$

6. $x + 7y + 3z = 3$
    $3x + 2y + 4z = 3$
    $x - 2y - 3z = 1$

Solving Systems of Three Equations by Substitution

Answers

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[1] $5r + 4s - 6t = -24$
$-2s + 2t = 0$
$s - t = 2$

No solution

[2] $4a + 5c + 4u = 49$
$4a + 2c + 2u = 28$
$4a + 3c + 6u = 45$

$a = 3, c = 5, u = 3$

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[3] $x + 3y - 3z = 12$
$3x - y + 4z = 0$
$-x + 2y - z = 1$

$x = 3, y = 1, z = -2$

[4] $y = x + z + 5$
$z = -3y - 3$
$2x - y = -4$

$x = -2, y = 0, z = -3$

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[5] $7a + 7b + 7c = 63$
$-7a - 4b - 7c = 33$
$-9a + 7b - 9c = -7$

No solution

[6] $x + 7y + 3z = 3$
$3x + 2y + 4z = 3$
$x - 2y - 3z = 1$

$x = \dfrac{73}{69}, y = \dfrac{26}{69}, z = -\dfrac{16}{69}$