Name_____

Solving Systems of Three Equations w/ Elimination

Date_____ Period____

Solve each system by elimination.

1) $-x - 5y - 5z = 2$
   $4x - 5y + 4z = 19$
   $x + 5y - z = -20$

2) $-4x - 5y - z = 18$
   $-2x - 5y - 2z = 12$
   $-2x + 5y + 2z = 4$

3) $-x - 5y + z = 17$
   $-5x - 5y + 5z = 5$
   $2x + 5y - 3z = -10$

4) $4x + 4y + z = 24$
   $2x - 4y + z = 0$
   $5x - 4y - 5z = 12$

5) $4x - y + 6z = 27$
   $-4x - 2y + 3z = 21$
   $4x - 6y + 2z = 12$

6) $-5a - b - 3c = -17$
   $-2a - b + 6c = 1$
   $-6a - b + 3c = -14$

7) $3x - 6y + 5z = 2$
$3x + 3y - z = 5$
$5x + 6y + 5z = -6$

8) $-4x - 2y + z = -19$
$-6x + 2y - 6z = -8$
$-4x + 2y - 5z = -6$

9) $6x - 6y - 4z = -10$
$-5x + 4y - z = -12$
$2x + 3y - 2z = 9$

10) $3r + 2s + 3t = 23$
$-r - 4s + 4t = -21$
$3r + s - t = 19$

11) $-x + 2z = -9$
$-x - 3y - 4z = 2$
$-3x - 2y + 2z = 17$

12) $2y + 2z = 6$
$-6x + 5y + 2z = 12$
$-4x - y - z = 1$

Critical thinking question:

13) Write a system of equations with the solution $(2, 1, 0)$.

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Solving Systems of Three Equations w/ Elimination

Solve each system by elimination.

1) $-x - 5y - 5z = 2$
$4x - 5y + 4z = 19$
$x + 5y - z = -20$

$(-2, -3, 3)$

2) $-4x - 5y - z = 18$
$-2x - 5y - 2z = 12$
$-2x + 5y + 2z = 4$

$(-4, 0, -2)$

3) $-x - 5y + z = 17$
$-5x - 5y + 5z = 5$
$2x + 5y - 3z = -10$

$(-1, -4, -4)$

4) $4x + 4y + z = 24$
$2x - 4y + z = 0$
$5x - 4y - 5z = 12$

$(4, 2, 0)$

5) $4x - y + 6z = 27$
$-4x - 2y + 3z = 21$
$4x - 6y + 2z = 12$

$(-1, -1, 5)$

6) $-5a - b - 3c = -17$
$-2a - b + 6c = 1$
$-6a - b + 3c = -14$

$(3, -1, 1)$

7) $3x - 6y + 5z = 2$
$3x + 3y - z = 5$
$5x + 6y + 5z = -6$

$(2, -1, -2)$

8) $-4x - 2y + z = -19$
$-6x + 2y - 6z = -8$
$-4x + 2y - 5z = -6$

No unique solution

9) $6x - 6y - 4z = -10$
$-5x + 4y - z = -12$
$2x + 3y - 2z = 9$

$(4, 3, 4)$

10) $3r + 2s + 3t = 23$
$-r - 4s + 4t = -21$
$3r + s - t = 19$

$(5, 4, 0)$

11) $-x + 2z = -9$
$-x - 3y - 4z = 2$
$-3x - 2y + 2z = 17$

No unique solution

12) $2y + 2z = 6$
$-6x + 5y + 2z = 12$
$-4x - y - z = 1$

$(-1, 0, 3)$

Critical thinking question:

13) Write a system of equations with the
solution $(2, 1, 0)$.

Many answers. Ex: $x + y + z = 3$, $2x + y + z = 5$, $x + 2y - z = 4$