Algebra I

7-3

Solving Systems:
Linear Transformations

Linear Transformation Method: Try to get a variable in the system to match up with the same coefficient, except one positive and one negative. Then add them.

→ The numbers in front.

Solve.

1) $x + y = 7$

Add. $x - y = 3$

$\frac{2x}{2} = \frac{10}{2}$

$x = 5$

$(5) + y = 7$

$y = 2$

$\{(5,2)\}$

2) $12n + 3m = 18$

$(5n + 3m = 4)(-1)$

$12n + 3m = 18$

$-5n - 3m = -4$

$\frac{7n}{7} = \frac{14}{7}$

$n = 2$

$\{(-2, 2)\}$

$5(2) + 3m = 4$

$10 + 3m = 4$

$10 - 10 + 3m = 4 - 10$

$\frac{3m}{3} = \frac{-6}{3}$

$m = -2$

3) $\frac{1}{2}x + \frac{1}{3}y = 4$

$\frac{5}{2}x - \frac{1}{3}y = 8$

$\frac{6}{2}x = 12$

$\frac{3x}{3} = \frac{12}{3}$

$x = 4$

$\frac{1}{2}(4) + \frac{1}{3}y = 4$

$2 + \frac{1}{3}y = 4$

$2 - 2 + \frac{1}{3}y = 4 - 2$

$(\frac{1}{3}y = 2)3$

$y = 6$

$\{(4,6)\}$

Assignment:

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4-14 even,

15-33 odd,

39-42 all