Solving systems of Equations by comparison.

1. Rearrange each equation for the indicated variable.

a) $3y = 2 - x$, x.

$-x = 3y - 2$.

$x = -3y + 2$.

b) $3x + y - 1 = 0$, x.

$3x = -y + 1$

$x = \frac{-y}{3} + \frac{1}{3}$.

c) $4x - y = 3$, y

$-y = -4x + 3$.

$y = 4x - 3$.

d) $4x - 2y + 6 = 0$, y.

$\frac{-2y}{-2} = \frac{-4x}{-2} - \frac{6}{-2}$.

$y = 2x + 3$.

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2. Solve each of the following systems using comparison method.

a) $y = x - 1$
$y = 2x - 3$.
$y = y$.

$x - 1 = 2x - 3$

$-x = -2$.

$x = 2$.

$y = 2 - 1$

$y = 1$ $(2, 1)$

b) $x = -2y + 3$.
$x = 3y - 7$.
$x = x$.

$-2y + 3 = 3y - 7$.

$\frac{-5y}{-5} = \frac{-10}{-5}$

$y = 2$.

$x = 3(2) - 7$.

$x = 6 - 7$

$x = -1$.

~~$(-1, 2)$~~

$(-1, 2)$

c) $y = 2x - 2$.
$y = -3 + 3x$
$y = y$.

$2x - 2 = -3 + 3x$

$\frac{-x}{-} = \frac{-1}{-}$

$x = 1$

$y = 2 - 2$

$y = 0$ $(1, 0)$.

d) $2x + y = 1$
$x - y = 2$.

$y = -2x + 1$
$y = x - 2$.
$y = y$.

$-2x + 1 = x - 2$.

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

$x = 1$

$y = -2 + 1$

$y = -1$

$(1, -1)$

e) ~~3x+y~~

e) $3x = y + 11$
$y = x - 5$ -- (ii)

$-y = -3x + 11$
$y = 3x - 11$ (i).

$y = y$.
$3x - 11 = x - 5$.

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

$x = 3$.

$y = 9 - 11$
$y = -2$ $(3, -2)$

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f)
$3y + 2 = x$ (i)
$x + 2y = 8 - y$ (ii)

$x = 8 - 3y$.

$x = x$.
$3y + 2 = 8 - 3y$
$\frac{6y}{6} = \frac{6}{6}$
$y = 1$
$x = 3 + 2$
$x = 5$
$(5, 1)$

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h) $5x - y = -13$ (i)
$y - 3x = 9$ (ii).

$-y = -5x - 13$.
$y = 5x + 13$. (i)
$y = 3x + 9$ (ii)
$y = y$.

$5x + 13 = 3x + 9$
$\frac{2x}{2} = \frac{-4}{2}$ $x = -2$.
$y = -10 + 13$ $y = 3$.
$(-2, 3)$

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i) $2x + y = 5$. (i)
$4x - y = 1$ (ii)

$y = -2x + 5$. (i)
$y = 4x - 1$ (ii)
$y = y$.
$-2x + 5 = 4x - 1$
$-6x = 6$
$x = 1$

$y = -2 + 5$
$y = 3$. $(1, 3)$

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j)
$2x + 16 = 4y$ (i)
$4y - 3x = 18$ (ii)

$4y = 2x + 16$
$y = \frac{1}{2}x + 4$. (i).
$\frac{4}{4}y = 3x + 18$
$y = \frac{3}{4}x + \frac{9}{2}$ -(ii)
$y = y$
$\frac{1}{2}x + 4 = \frac{3}{4}x + \frac{9}{2}$.
$\frac{1}{4}x = -\frac{1}{2}$ $x = -2$.
$y = -1 + 4 = 3$ $(-2, 3)$