Answer key

The method: Systems: substitution

Put the expression for y into the other equation. Solve for x, then find y.

$y = -3x - 12$; $-3x - 4y = -6$ $x = -6, y = 6$

$-3x - 4(-3x - 12) = -6$ put $-3x - 12$ in for y

$9x + 48 = -6$ distribute and combine

$9x = -54$

$x = -6$

$y = (-3)(-6) + (-12) = 6$ put x back in to find y

Problems 1 and 2 worked out · Version 0A

$y = -3x - 23$; $-3x - 2y = 28$ $x = -6, y = -5$

$-3x - 2(-3x - 23) = 28$ put $-3x - 23$ in for y

$3x + 46 = 28$ distribute and combine

$3x = -18$

$x = -6$

$y = (-3)(-6) + (-23) = -5$ put x back in to find y

$y = x + 6$; $5x + y = -30$ $x = -6, y = 0$

$5x + (x + 6) = -30$ put $x + 6$ in for y

$6x + 6 = -30$ distribute and combine

$6x = -36$

$x = -6$

$y = 1(-6) + 6 = 0$ put x back in to find y

Systems: substitution · Version 0A

1) $x = -6, y = -5$ 2) $x = -6, y = 0$
3) $x = -5, y = -1$ 4) $x = -2, y = -1$
5) $x = -5, y = 4$ 6) $x = -4, y = 4$ 7) $x = 1, y = -6$
8) $x = 4, y = 3$ 9) $x = 6, y = -1$