Elimination Method

Given equations: $x - 2 = -5y$
$-2y = -3x + 6$

1) Arrange both equations in standard form, placing like terms one above the other

$x - 2 = -5y$
$+2 \quad +2$
$x = -5y + 2$
$+5y \quad +5y$
$x + 5y = 2$

$-2y = -3x + 6$
$+3x \quad +3x$
$3x - 2y = 6$

2) Choose a variable to eliminate, and with a proper choice of multiplication, arrange so that the coefficients of that variable are opposites of one another

$x + 5y = 2$ —> Multiply by 2 —> $2x + 10y = 4$
$+ \; 3x - 2y = 6$ —> Multiply by 5 —> $15x - 10y = 30$

3) Add the equations, leaving one equation with one variable.

$2x + 10y = 4$
$+ \; 15x - 10y = 30$
$17x = 34$

4) Solve for the remaining variable

$x = 2$

5) Substitute the value in Step 4 into any original equation and solve for the other variable.

$(2) - 2 = -5y$
$0 = -5y$

$0 = y$

6) Write answer as an ordered pair (x, y)

$x = 2$ and $y = 0$ so… $(2,0)$