M10 - 9.3 - Elimination Notes

Solving a system of equations using elimination

① $2y = x - 2$ ② $y = x - 3$ Identify equation # 1
Identify equation # 2

$$2y = x - 2$$
$$\underline{-(y = x - 3)}$$
$$y = 0 + 1$$

$\boxed{-2 - (-3) = 1}$

Subtract equations to eliminate x
Solve
Substitute
Solve

$\boxed{y = 1}$

② $y = x - 3$
$(1) = x - 3$
$\underline{+3 \qquad + 3}$
$4 = x$

Intersection point:

| Put brackets around what you're subtracting |

$\boxed{x = 4}$

$\boxed{(4,1)}$

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① $y + x = 6$ ② $y - x = 4$ Identify equation # 1
Identify equation # 2

$$y + x = 6$$
$$\underline{+(y - x = 4)}$$
$$2y + 0x = 10$$

Add equations to eliminate x

| You could have subtracted equations to eliminate y |

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

$\boxed{y = 5}$ Solve

① $y + x = 6$ Substitute
$(5) + x = 6$
$\underline{-5 \qquad - 5}$

Solve

$\boxed{x = 1}$

$\boxed{(1,5)}$ Intersection point: