WARM-UP

1. How do you decide whether to use **addition** or **subtraction** when solving using elimination?

matching coeff., opposite signs.

matching coeff., same sign.

2. Solve.

$$8x + 5y = 38$$

$$-8x + 2y = 4$$

$0x + 7y = 42$

$\frac{7y}{7} = \frac{42}{7}$

$y = 6$

$8x + 5(6) = 38$

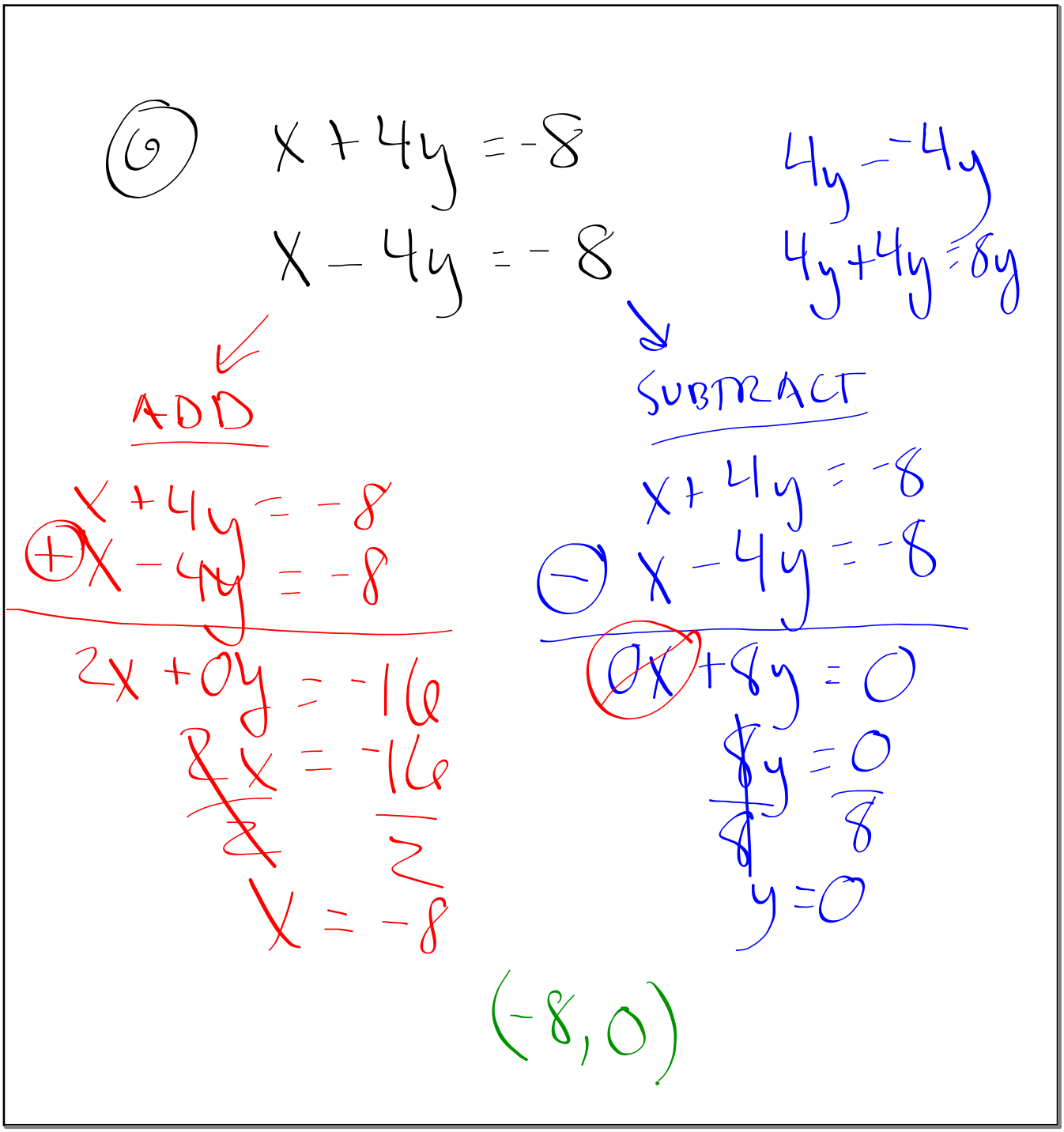
$8x + 30 = 38$

$-30 \quad -30$

$\frac{8x}{8} = \frac{8}{8}$

$x = 1$

$(1, 6)$


6
x + 4y = -8
x - 4y = -8
4y - -4y
4y + 4y = 8y
ADD
x + 4y = -8
+ x - 4y = -8
2x + 0y = -16
2x = -16
2 2
x = -8
SUBTRACT
x + 4y = -8
- x - 4y = -8
0x + 8y = 0
8y = 0
8 8
y = 0
(-8, 0)

~~3~~, ~~5~~, 6, 9, ~~8~~, 7

(3) $x+4y=11$
$\ominus\ x-6y=11$
$0x+10y=0$
$\frac{10y}{10}=\frac{0}{10}$
$y=0$
$x+4(0)=11$
$x+0=11$
$x=11$

$4y-\ominus 6y=$
$4y+6y=10y$

$(11,0)$
x,y

(5) $3x+4y=19$
$\ominus\ 3x+6y=33$
$0x-2y=-14$
$\frac{-2y}{-2}=\frac{-14}{-2}$
$y=7$
$3x+4(7)=19$
$3x+28=19$
$-28\quad -28$
$\frac{3x}{3}=\frac{-9}{3}$
$x=-3$

$(-3,7)$

(8) $3x-y=-1$
$-3x-y=5$

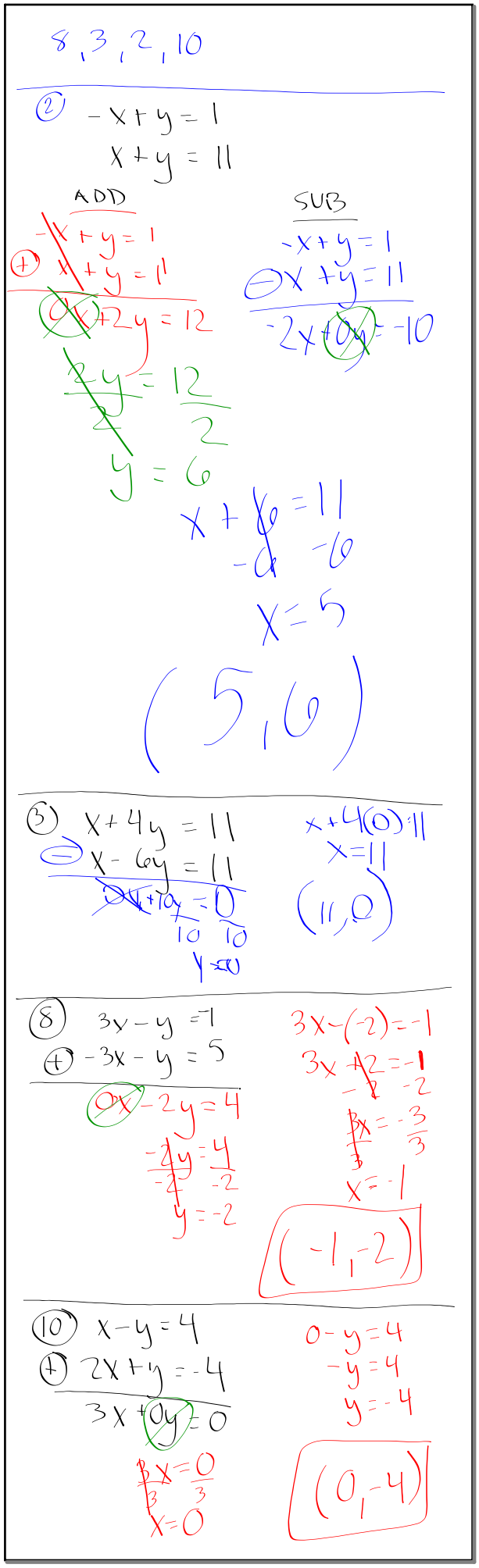
ADD
$3x-y=-1$
$\oplus\ -3x-y=5$
$0x-2y=4$
$\frac{-2y}{-2}=\frac{4}{-2}$
$y=-2$

SUBTRACT
$3x-y=-1$
$\ominus\ -3x-y=5$
$6x+0y=-6$
$\frac{6x}{6}=\frac{-6}{6}$
$x=-1$

$(-1,-2)$

(9) $2x-3y=9$
$\ominus\ -5x-3y=30$
$7x+0y=-21$
$\frac{7x}{7}=\frac{-21}{7}$
$x=-3$
$2(-3)-3y=9$
$-6-3y=9$
$+6\quad +6$
$\frac{-3y}{-3}=\frac{15}{-3}$
$y=-5$

$(-3,-5)$


8, 3, 2, 10
② -x + y = 1
x + y = 11
ADD
-x + y = 1
+ x + y = 11
0x + 2y = 12
2y = 12
2 2
y = 6
x + 6 = 11
-6 -6
x = 5
(5, 6)
SUB
-x + y = 1
- x + y = 11
-2x + 0y = -10
⑤ x + 4y = 11
- x - 6y = 11
0x + 10y = 0
10 10
y = 0
x + 4(0) = 11
x = 11
(11, 0)
⑧ 3x - y = -1
+ -3x - y = 5
0x - 2y = 4
-2y = 4
-2 -2
y = -2
3x - (-2) = -1
3x + 2 = -1
-2 -2
3x = -3
3 3
x = -1
(-1, -2)
⑩ x - y = 4
+ 2x + y = -4
3x + 0y = 0
3x = 0
3 3
x = 0
0 - y = 4
-y = 4
y = -4
(0, -4)