HW: SoE Word Problems/2-18 even, omit 14

Warm up:

Factor.

1) $4a^2 - 81b^6$ $(2a + 9b^3)(2a - 9b^3)$

2) $10x^2 + x - 3$ $(5x + 3)(2x - 1)$

3) $9x^2 - 36xy + 36y^2 = 9(x^2 - 4xy + 4y^2)$

$(3x - 6y)^2$

$(3x - 6y)(3x - 6y)$

$9(x - 2y)^2$

$10x^2 + x - 3$

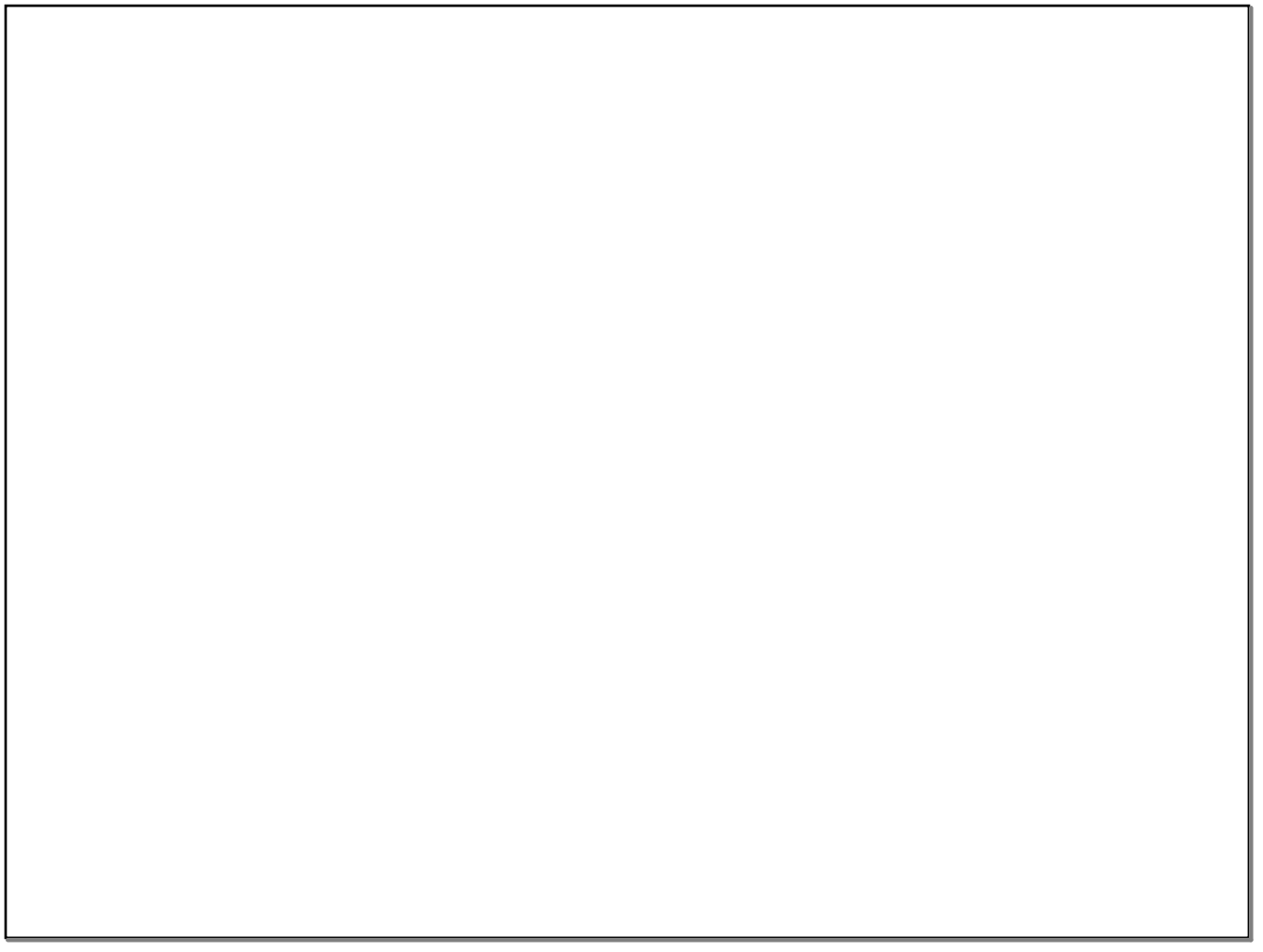
$-30x^2$

$10x^2 + 6x - 5x - 3$

$2x(5x + 3) - (5x + 3)$

$(5x + 3)(2x - 1)$

February 22, 2022



The sum of two numbers is 25 and their difference is 7. Find the numbers.

$x + y = 25$

$-(x - y = 7)$

$2y = 18$

$y = 9$

$x + 9 = 25$

$-9 \quad -9$

$x = 16$

16 and 9

Cory has $24 more than twice as much as Stan. Together they have $150. How much money does each have?

$C = 2s + 24$

$C + S = 150$

$2s + 24 + s = 150$

$3s + 24 = 150$

$-24 \quad -24$

$\frac{3s}{3} = \frac{126}{3}$

$s = 42$

Stan → $42

Cory → $108

$C + 42 = 150$

$-42 \quad -42$

$C = 108$

Sam has 30 nickels and dimes worth $2.40
How many nickels does he have?

$5(n+d=30)5$

$5n+10d=240$

$5n+5d=150$

$-(5n+10d=240)$

$-5d=-90$

$\frac{-5d}{-5}=\frac{-90}{-5}$

$d=18$

18 dimes
12 nickels

$30-18=12$

$n+18=30$

A person invests $5000 in treasury notes and bonds. The notes pay 8% annual interest and the bonds pay 10% annual interest. If the annual income is $480, how much is invested in treasury notes?

$s + b = 5000$

$0.08s + 0.10b = 480$

$8s + 8b = 40000$

$-(8s + 10b = 48000)$

$-2b = -8000$

$\frac{-2b}{-2} = \frac{-8000}{-2}$

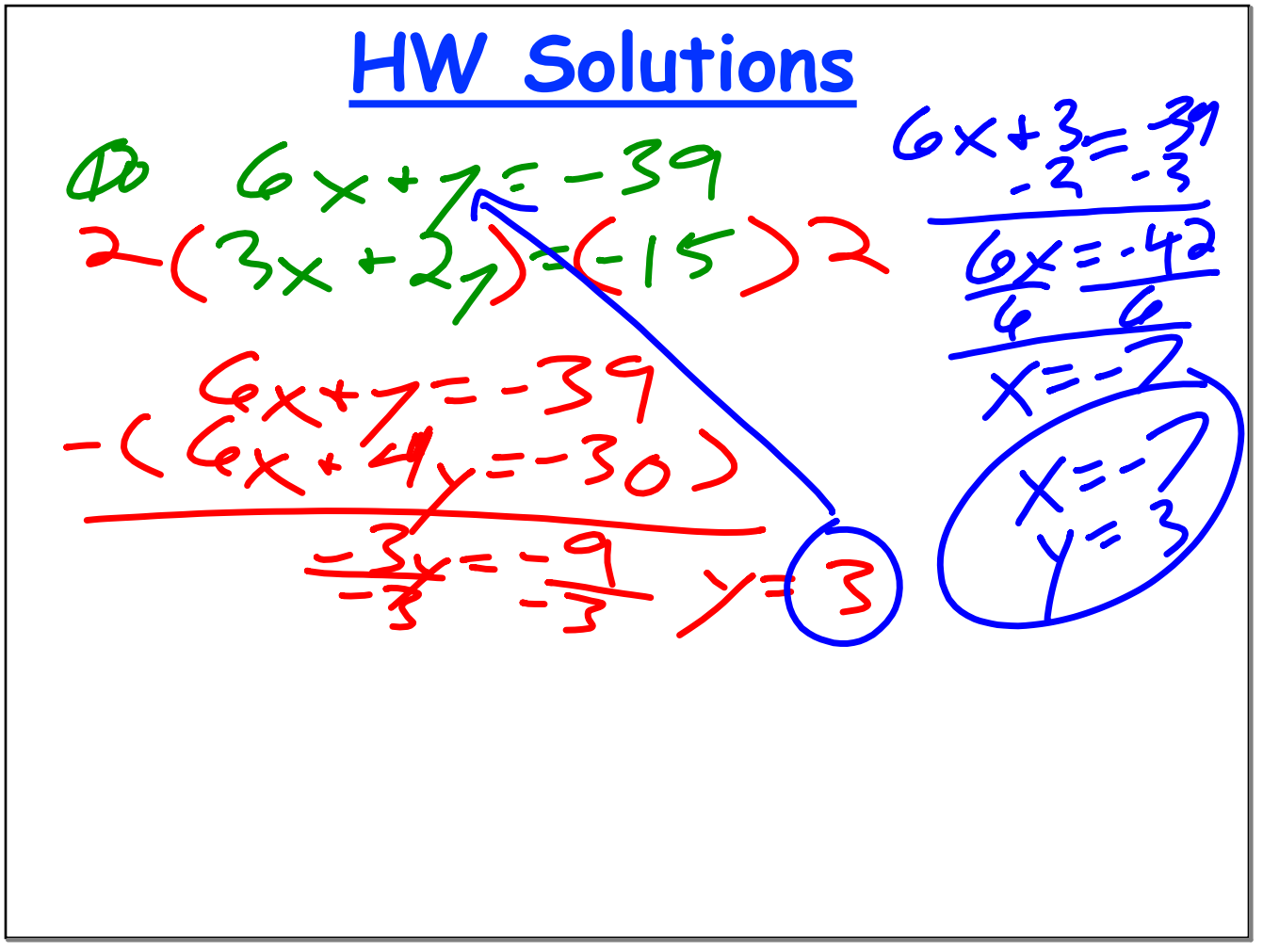
$b = 4000$

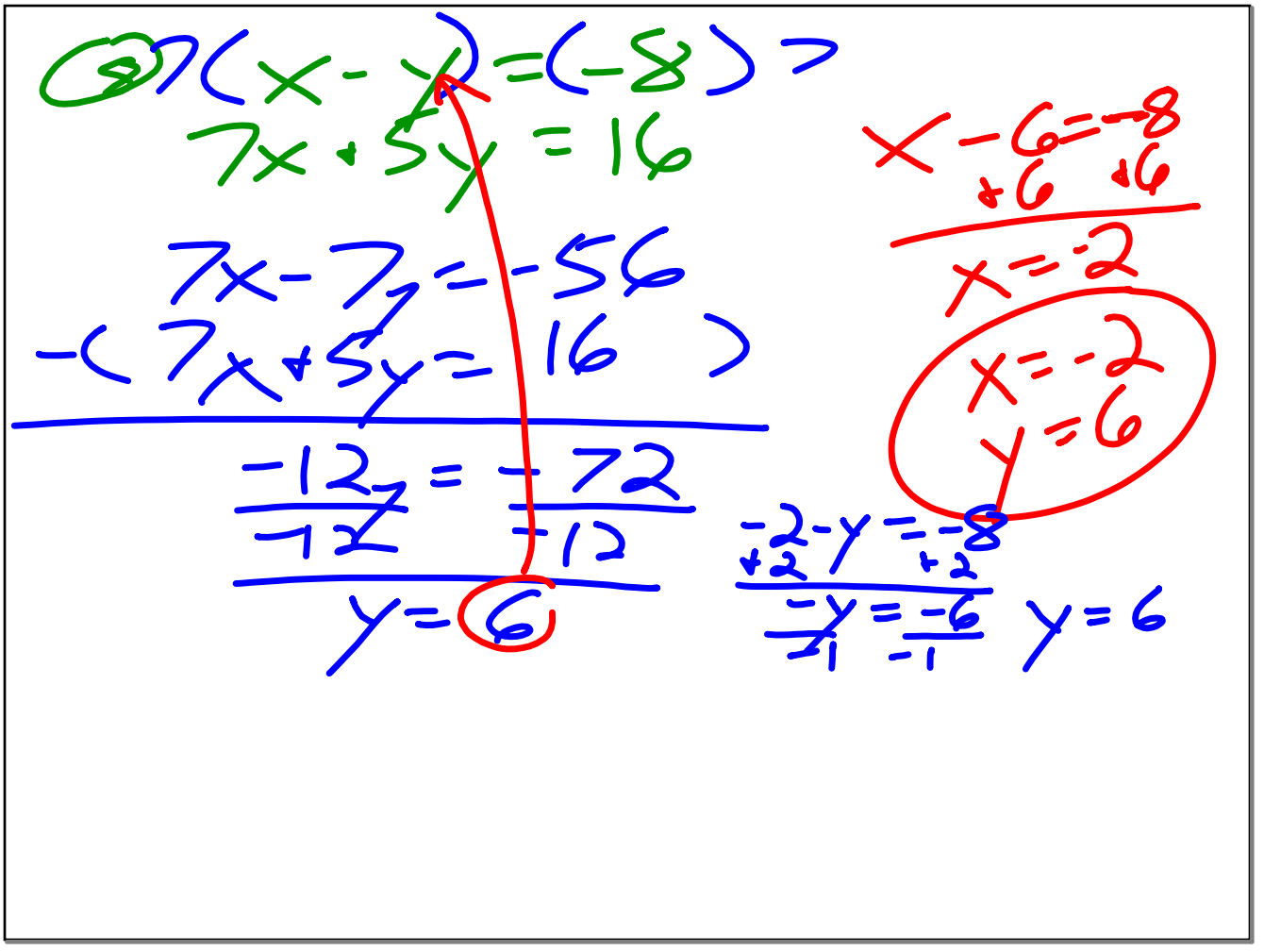
bonds → $4000

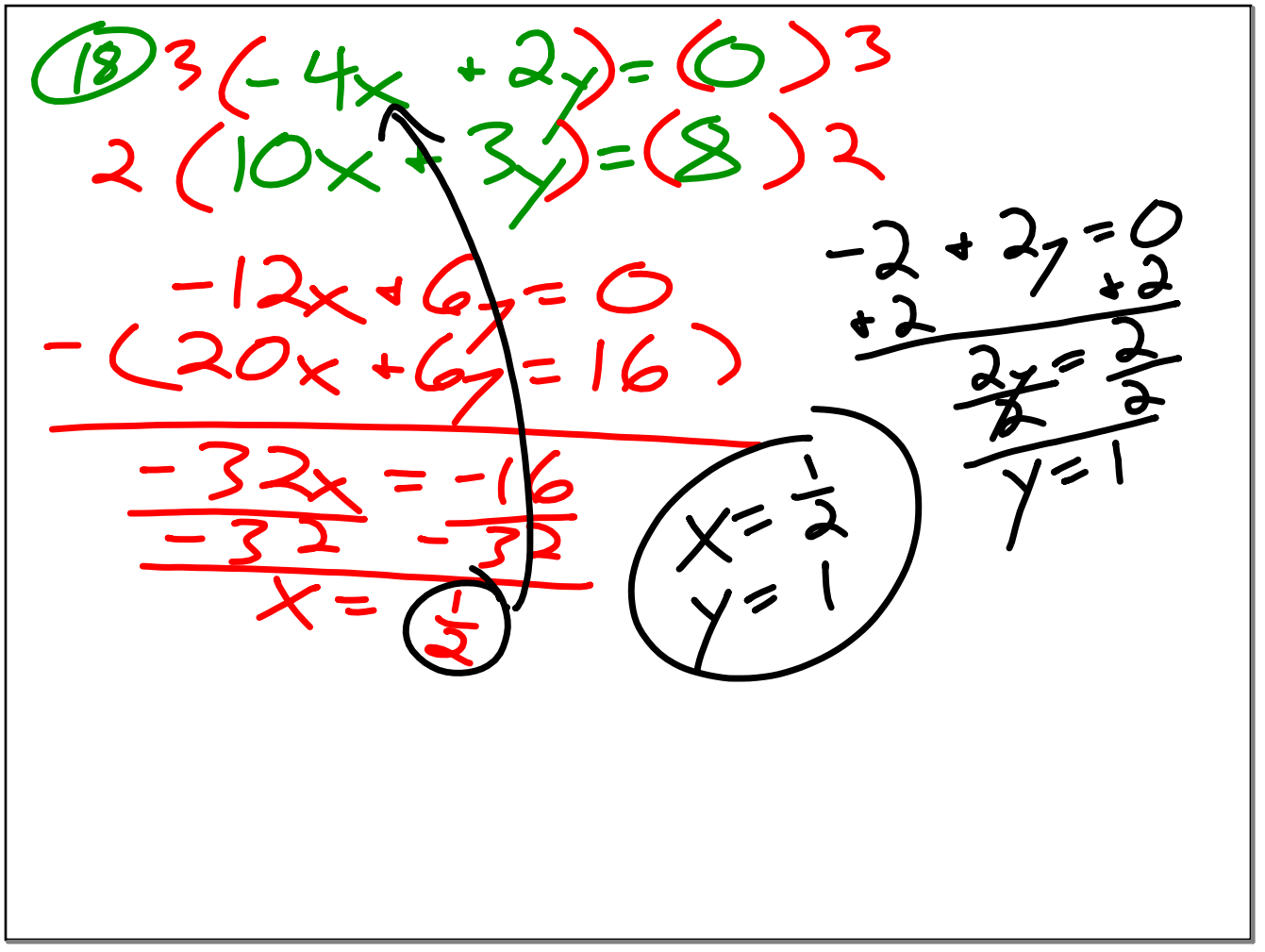
notes → $1000

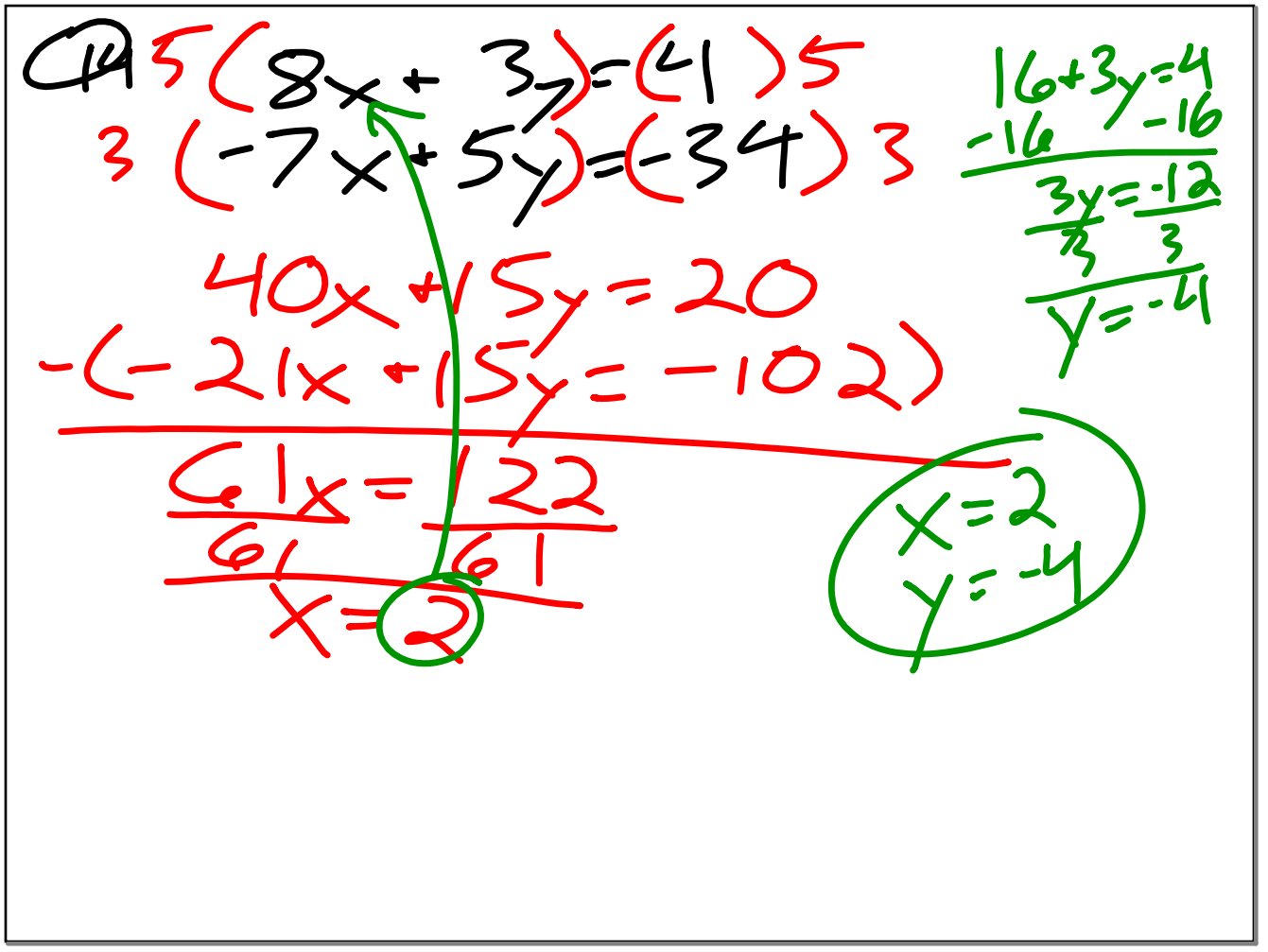
$5000 - 4000 = 1000$

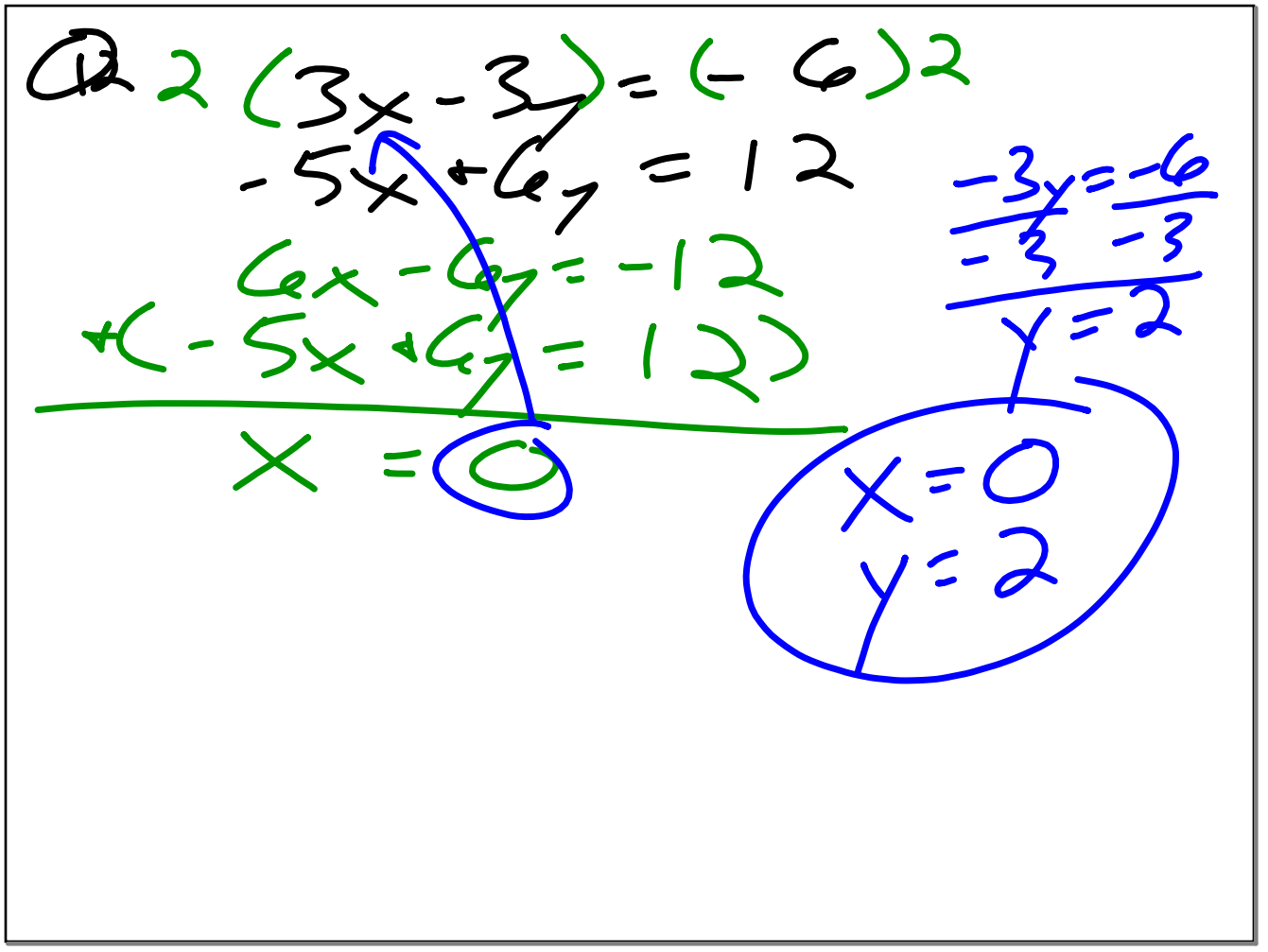
HW Solutions

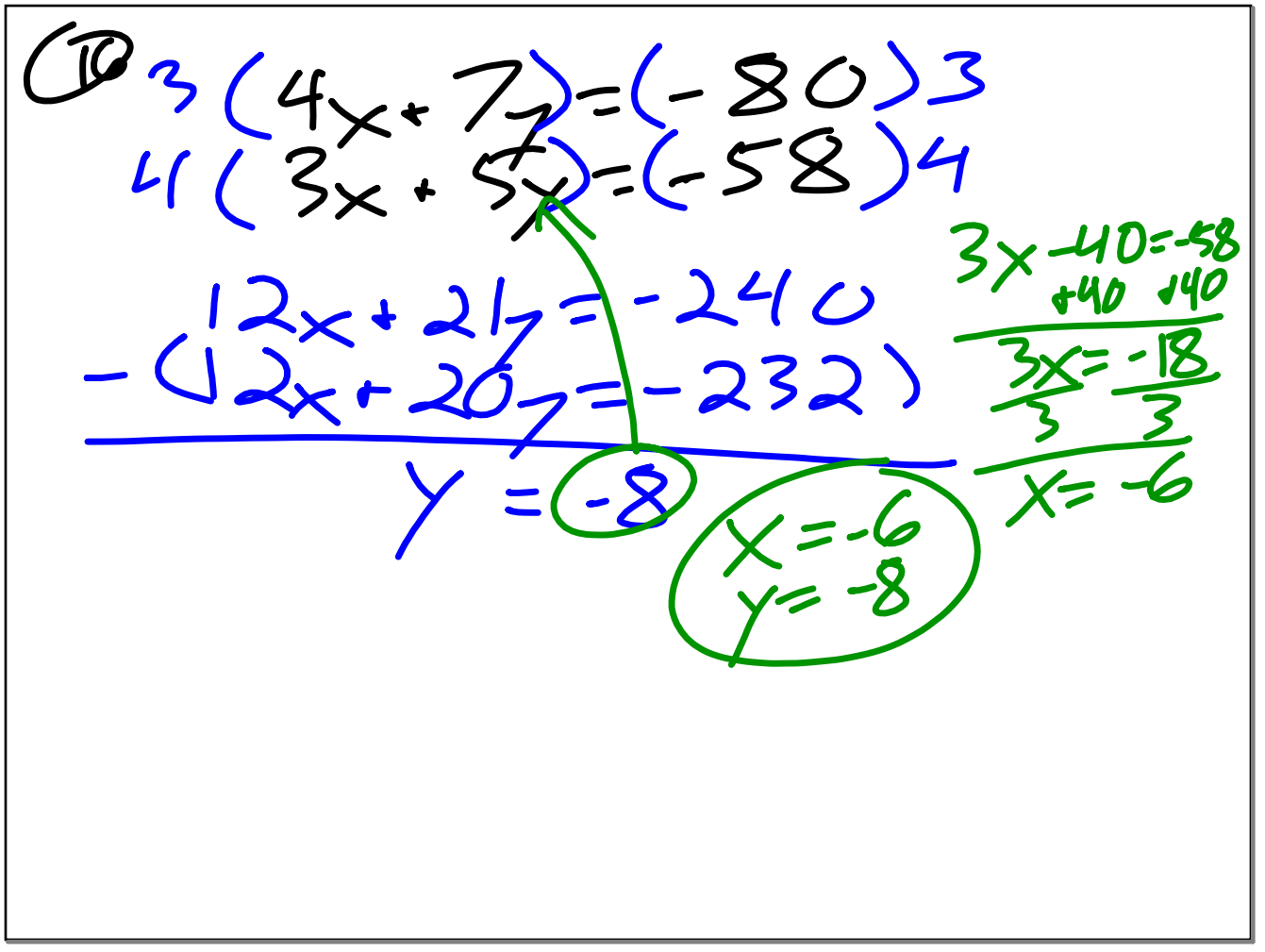



(3) 7(x - y) = (-8)
7x + 5y = 16
7x - 7y = -56
-(7x + 5y = 16)
-12y = -72
-12 -12
y = 6
x - 6 = -8
+6 +6
x = -2
x = -2
y = 6
-2 - y = -8
+2 +2
-y = -6
-1 -1
y = 6


(18) 3(-4x + 2y) = (0)3
2(10x + 3y) = (8)2
-12x + 6y = 0
-(20x + 6y = 16)
-32x = -16
-32 -32
x = 1/2
-2 + 2y = 0
+2 +2
2y = 2
2 2
y = 1
x = 1/2
y = 1


4
5(8x + 3y = -4)5
3(-7x + 5y = -34)3
40x + 15y = 20
-(-21x + 15y = -102)
61x = 122
61 61
x = 2
16 + 3y = -4
-16 -16
3y = -12
3 3
y = -4
x = 2
y = -4


(2) 2(3x - 3y) = (-6)2
-5x + 6y = 12
6x - 6y = -12
+(-5x + 6y = 12)
x = 0
-3y = -6
-3 -3
y = 2
x = 0
y = 2


10
3(4x + 7y) = (-80)3
4(3x + 5y) = (-58)4
12x + 21y = -240
-(12x + 20y = -232)
y = -8
3x - 40 = -58
+40 +40
3x = -18
3 3
x = -6
x = -6
y = -8