

HW Review p. 430

#33

\$3 per small card (x)

\$5 per large card (y)

\$95 total

25 cards

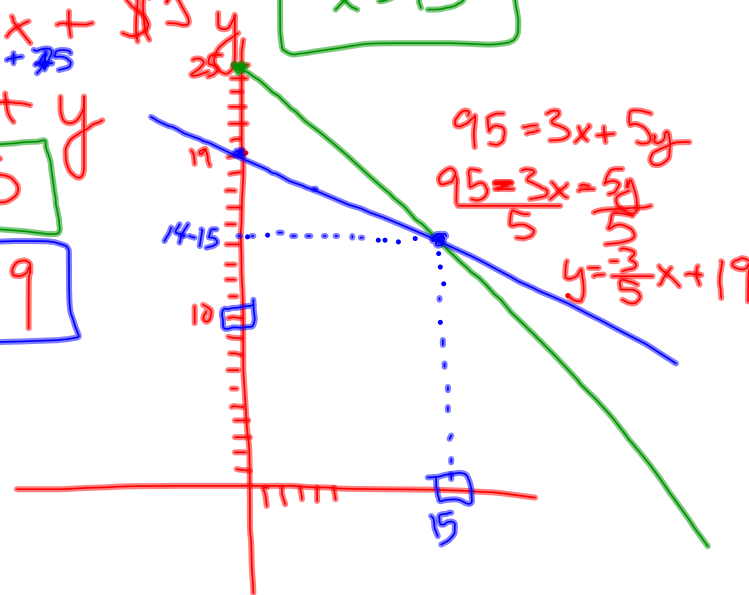
$$\begin{aligned} \$95 &= \$3x + \$5y \\ 25 &= x + y \end{aligned}$$

$$y = -x + 25$$

$$y = -\frac{3}{5}x + 19$$

14 or 15 large
10 or 11 small

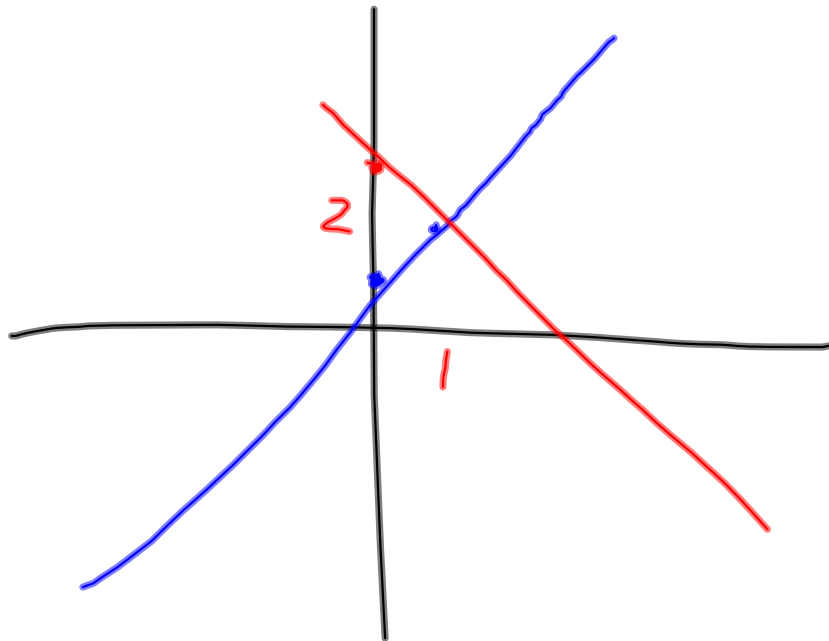
$$\begin{aligned} y &= 10 \\ x &= 15 \end{aligned}$$



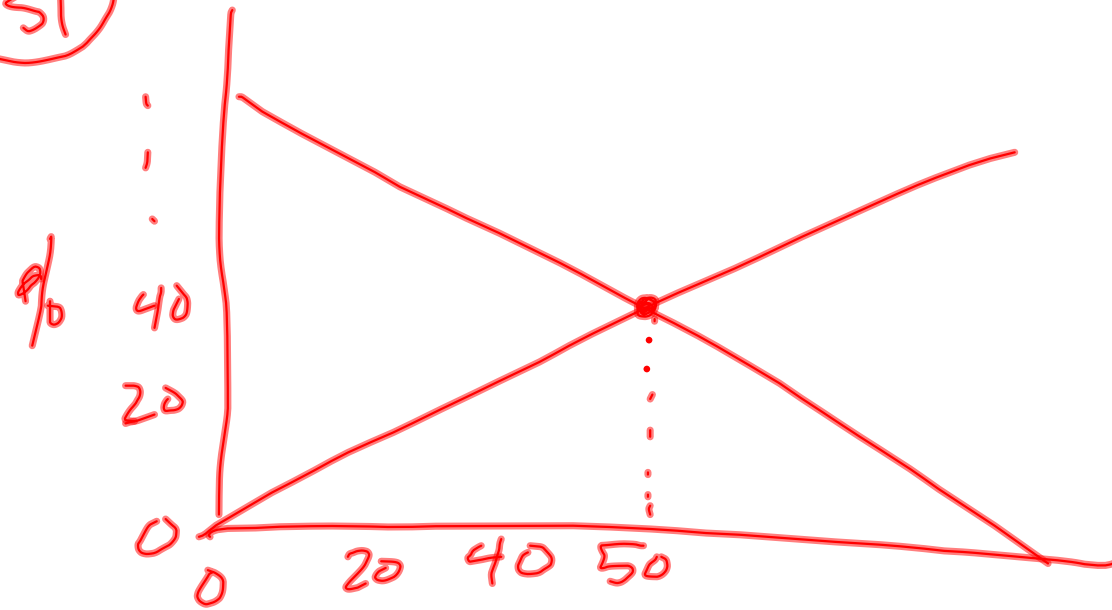
⑫

$$\begin{array}{l} y = -x + 3 \\ y = x + 1 \end{array}$$

$(1, 2)$



31



→ years since 1990

2040

Substitution method of solving linear systems:

$$\begin{aligned} 4x + 3y &= 27 \\ -2x + y &= 14 \end{aligned} \quad (x, y)$$

1. Solve one equation for either x or y

$$y = 2x + 14$$

$x = -\frac{3}{2}$
 $y = 11$
 $(-\frac{3}{2}, 11)$

2. Substitute for the variable you just solved for - in the other equation

$$\begin{aligned} 4x + 3(2x + 14) &= 27 \\ 4x + 6x + 42 &= 27 \\ 10x &= -15 \end{aligned}$$

3. Substitute the variable you just found into either equation, and solve for the other variable

$$\begin{aligned} y &= 2x + 14 \\ &= 2(-\frac{3}{2}) + 14 \\ &= 11 \end{aligned}$$

$$\begin{aligned}x - 2y &= -6 \\ 4x + 6y &= 4\end{aligned}$$

$$(-2, 2)$$

① $x - 2y = -6 + 2y$
 $+ 2y$
 $x = 2y - 6$

② $4x + 6y = 4$
 $4(2y - 6) + 6y = 4$
 $8y - 24 + 6y = 4$
 $14y = 28$
 $y = 2$

③ $x = 2y - 6$
 $= 2(2) - 6$
 $= 4 - 6$
 $= -2$

Solve the linear system by using substitution.

7. $x = 6 - 4y$ (2, 1)

$2x - 3y = 1$

$2(6 - 4y) - 3y = 1$

$12 - 8y - 3y = 1$

$-11y = -11$

$y = 1$

$x = 6 - 4y$
 $= 6 - 4(1)$
 $= 2$

10. $6x - y = -35$

$5x - 2y = -35$

8. $4x + 3y = 0$

$2x + y = -2$

11. $-x + 3y = -9$

$8x - 4y = 32$

(4, -1)

9. $-x + 2y = -6$

$8x + y = 31$

$y = -8x + 31$

$-x + 2(-8x + 31) = -6$

$-x - 16x + 62 = -6$

$-17x = -68$

$x = 4$

$y = -8(4) + 31$
 $= -32 + 31$
 $= -1$

12. $3x + 3y = -18$

$4x - y = -14$

✓ $2 = 6 - 4(1)$
 $= 2$

$2(2) - 3(1) = 1$
 $✓ 4 - 3 = 1 ✓$

✓ $-4 + 2(-1) = -6 ✓$

✓ $8(4) + -1 = 31 ✓$

Homework:

p. 439 4-26 (even), 31