HW # 28 (10.1) 6, 10, 16, 22, 26, 32, 36, 48, 62, 70

6) $\begin{cases} 3x + y = 1 \\ 5x + 2y = 1 \end{cases}$

$y = 1 - 3x \Rightarrow 5x + 2(1-3x) = 1$

$5x + 2 - 6x = 1$

$-x = -1$

$x = 1$

$y = 1 - 3(1)$

$y = -2$

$\boxed{(1, -2)}$

10) $\begin{cases} 2x + 5y = 15 \\ 4x + y = 21 \end{cases}$

$2(2x + 5y = 15)$

$-\ 4x + y = 21$

$0x + 9y = 9 \Rightarrow y = 1$

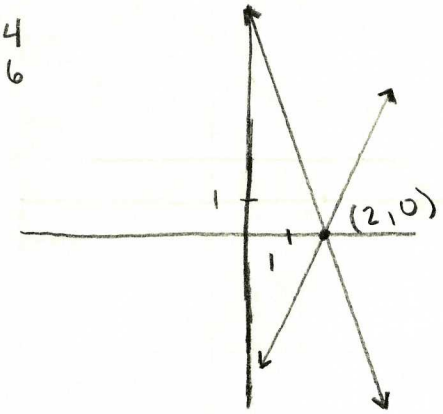
$4x + (1) = 21$

$4x = 20$

$x = 5$

$\boxed{(5, 1)}$

16) $\begin{cases} 2x - y = 4 \\ 3x + y = 6 \end{cases}$



$\boxed{(2, 0)}$

22) $\begin{cases} x - y = 3 \\ x + 3y = 7 \end{cases}$

$x = 3 + y \Rightarrow (3+y) + 3y = 7$

$4y = 4$

$y = 1$

$x = 3 + 1$

$x = 4$

$\boxed{(4, 1)}$

26) $\begin{cases} x + y = 7 \\ 2x - 3y = -1 \end{cases}$

$3(x + y = 7)$

$+\ 2x - 3y = -1$

$5x + 0y = 20$

$5x = 20$

$x = 4$

$(4) + y = 7$

$y = 3$

$\boxed{(4, 3)}$

32) $\begin{cases} 0.2x - 0.2y = -1.8 \\ -0.3x + 0.5y = 3.3 \end{cases}$

$x = y - 9 \Rightarrow -0.3(y-9) + 0.5y = 3.3$

$0.2y = 0.6$

$y = 3$

$x = (3) - 9$

$x = -6$

$\boxed{(-6, 3)}$

36, 48, 62, 70

36) $\begin{cases} -3x + 5y = 2 \\ 9x - 15y = 6 \end{cases}$

$3(-3x + 5y = 2)$
$+ \quad 9x - 15y = 6$
$0x + 0y = 12$

$0 = 12 \Rightarrow$ false!

No solution

48) $\begin{cases} -\frac{1}{10}x + \frac{1}{2}y = 4 \\ 2x - 10y = -80 \end{cases}$

$20\left(-\frac{1}{10}x + \frac{1}{2}y = 4\right)$
$+ \quad 2x - 10y = -80$
$0x + 0y = 0$

$0 = 0 \Rightarrow$ always true

$2x - 10y = 80$
$-10y = -2x - 80$
$y = \frac{1}{5}x - 8$

$\left(x, \frac{1}{5}x - 8\right)$ for $x \in \mathbb{R}$

62) s = # of boxes; d = # deluxe strawberries sold

$\begin{cases} s + d = 135 \\ 7s + 10d = 1110 \end{cases}$

$7(s + d = 135)$
$- \quad 7s + 10d = 1110$
$0s - 3d = -165$
$d = 55$

$s + (55) = 135$
$s = 80$

80 standard sold
50 deluxe

70) x = amount invested @ 6%; y = amount invested @ 10%

$x = 2y$; $0.06x + 0.10y = 3520$
$6x + 10y = 352000$
$6(2y) + 10y = 352000$
$22y = 352000$
$y = 16000$

$x = 2(16000)$
$x = 32000$

he invested $32000 @ 6%
$16000 @ 10%