Algebra II Examination Two Review

Key

(1)

Use the substitution method. Show all your work.

1. $\begin{cases} y = 5 - 4x \\ 2x - 3y = 13 \end{cases}$

$2x - 3(5-4x) = 13$
$2x - 15 + 12x = 13$
$14x - 15 = 13$
$+15 \quad +15$
$14x = 28$
$\boxed{x = 2}$

$y = 5 - 4x$
$y = 5 - 4(2)$
$y = 5 - 8$
$\boxed{y = -3}$

2. $\begin{cases} 4x - 3y = 26 \\ x - y = 7 \end{cases} \Rightarrow y = x - 7$

$4x - 3y = 26$
$4x - 3(x-7) = 26$
$4x - 3x + 21 = 26$
$x + 21 = 26$
$-21 \quad -21$
$\boxed{x = 5}$

$x - y = 7$
$5 - y = 7$
$\boxed{y = -2}$

3. $\begin{cases} 3x + y = 5 \\ x - 2y = 4 \end{cases} \Rightarrow x = 2y + 4$

$3x + y = 5$
$3(2y+4) + y = 5$
$6y + 12 + y = 5$
$7y + 12 = 5$
$-12 \quad -12$
$7y = -7$
$\boxed{y = -1}$

$x - 2y = 4$
$x - 2(-1) = 4$
$x + 2 = 4 \Rightarrow \boxed{x = 2}$

4. $\begin{cases} x + y = 5 \\ 2x - y = 4 \end{cases} \Rightarrow y = 5 - x$

$2x - y = 4$
$2x - (5-x) = 4$
$2x - 5 + x = 4$
$3x - 5 = 4$
$+5 \quad +5$
$3x = 9$
$\boxed{x = 3}$

$x + y = 5$
$3 + y = 5$
$\boxed{y = 2}$

Use the elimination method. Show all your work.

5. $\begin{cases} 2x + 6y = -8 \\ (5x - 3y = 88) * 2 \end{cases}$

$2x + 6y = -8$
$(+) \quad 10x - 6y = 176$
$12x = 168$
$\boxed{x = 14}$

$2(14) + 6y = -8$
$28 + 6y = -8$
$6y = -8 - 28$
$6y = -36$
$\boxed{y = -6}$

6. $\begin{cases} 9x + 3y = -3 \\ 2x - 3y = -8 \end{cases}$ (+)

$11x = -11$
$\boxed{x = -1}$

$2(-1) - 3y = -8$
$-2 - 3y = -8$
$-3y = -6$
$\boxed{y = 2}$

7. $\begin{cases} 4x - 9y = 26 \\ 4x - 5y = 2 \end{cases}$ (-)

$-4y = 24$
$\boxed{y = -6}$

$4x - 5(-6) = 2$
$4x + 30 = 2$
$4x = -28$
$\boxed{x = -7}$

8. $\begin{cases} y + 1 = x \\ -2x + 3y = 2 \end{cases}$

$(x - y = 1) * 2$
$-2x + 3y = 2$

$2x - 2y = 2$
$(+) \quad -2x + 3y = 2$
$\boxed{y = 4}$

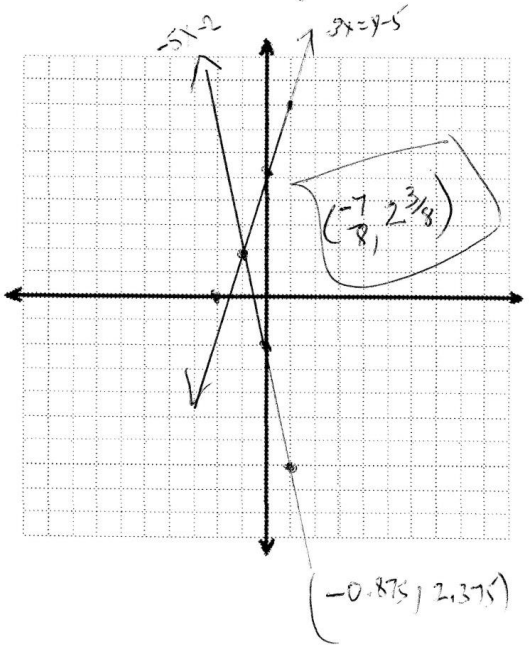
$y + 1 = x$
$4 + 1 = x$
$\boxed{5 = x}$

Algebra II Examination Two Review Key

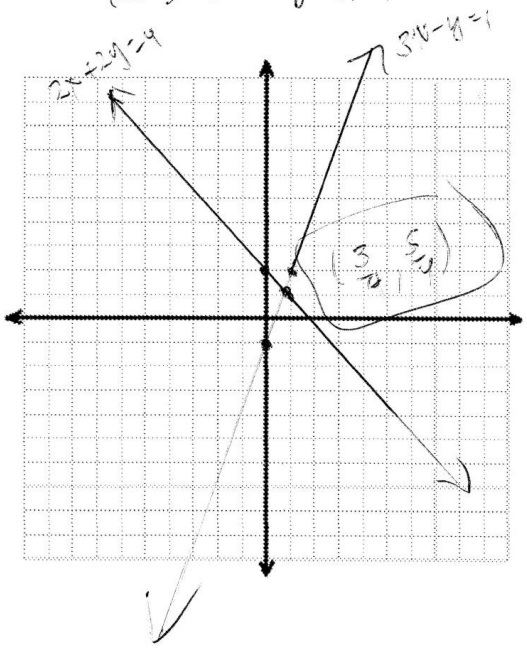
(2)

In problems 9 and 10, solve the system graphically.

9. $\begin{cases} y = -5x - 2 \\ 3x = y - 5 \end{cases} \Rightarrow$ $y = 3x + 5$



10. $\begin{cases} 2x + 2y = 4 \\ 3x - y = 1 \end{cases}$ $y = 2 - x$ $y = 3x - 1$



In problems #11-12, classify each system and determine the number of solutions.

11. $\begin{cases} 4y - x = -24 \\ 3x = 12y + 72 \end{cases}$

INFINITE
CONSISTENT
DEPENDENT

12. $\begin{cases} 10x - 2y = 22 \\ 5y - 25x = 65 \end{cases}$

NO SOLUTION
INCONSISTENT