Unit 9: Review

1. Determine if $(x, y) = (3, -2)$ is a solution to this system:
   $y = 2x - 8$; $y = -x + 1$

In problems 2 – 4, examine the slopes and y-intercepts to determine how many points are in the solution set to the given systems. Justify your answers.
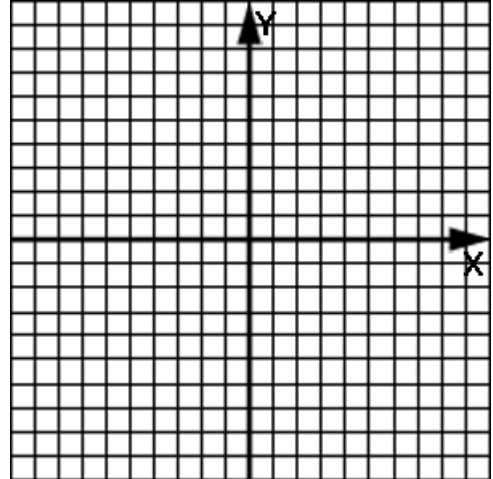
2. $y = 2x + 6$; $y = -x - 3$

3. $8x - 2y = 8$; $4x - y = 4$

4. $-3y + x = 3$; $-6y + 2x = 18$

5. Graph these two lines to find their intersection point.

$x - 2y = 8$; $2x + y = 1$

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6. Use the substitution method to find the intersection point of these lines:

$x = 4y - 9$; $2x + y = 9$

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7. Use the substitution method to solve this system of equations:

$7x - 2y = -6$; $x - y = 2$

8. Use the substitution method to solve this system:

    $3a - 5b = -35$; $2a - 5b = -30$

9. Use the elimination method to find the intersection point of these two lines:

    $-7y - 2x = 5$; $x - 3y = 4$

10. Use the elimination method to solve this system of equations:

    $4h - 7g = 10$; $3h + 2g = -7$

11. Use the elimination method to solve this system of equations:

   $2x - 5y = 27$; $8x - 3y = -11$

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12. The number of boys in Mrs. Assignmore's algebra class is 5 more than the number of girls. If there are 31 students in the class, how many girls are in the class?

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13. A triangle with a perimeter of 27 meters has a base that is 3 meters more than the other two equal sides. How long is each side of the triangle?

14. Use a graphing calculator to find the intersection point of these two lines. Make a sketch of the graphed lines in the calculator display.

$y = .35x + 2.01$; $y = -1.056x - 2.2$