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Pre-AP Geometry Summer Assignment

Pre-AP Geometry is a rigorous critical thinking course. Our expectation is that each student is fully prepared. Therefore, the following Algebra 1 concepts must be mastered prior to beginning Pre-AP Geometry.

- *Solving linear equations*
- *Graphing linear equations*
- *Finding slope from ordered pairs and/or linear equations.*
- *Writing equations of lines in slope-intercept, point-slope and standard forms*
- *Solving systems of equations*
- *Multiplying binomials*
- *Factoring*
- *Solving quadratic equations by factoring and with Quadratic Formula*
- *Simplifying, multiplying, and adding radicals*
- *Solving right triangles using the Pythagorean Theorem*
- *Multiplying, dividing, adding and subtracting expressions with exponents, take a power to a power, simplifying expressions with negative exponents*
- *Adding, subtracting, multiplying, dividing, and simplifying fractions*
- *Solving literal equations*

Be prepared to turn in this assignment on the first day of school. You are expected to show all your work in a clear and organized manner. For your benefit, the assignment includes the answers. AISD staff will not be available for tutoring during the summer so you may need to look up some vocabulary through Google or other resources.

A test over these concepts will take place during the first week of school. The test will be non-calculator.

Leave answers in simplified radical form or improper fractions (no decimals).

We look forward to meeting you in August!

This assignment should be completed without the use of a calculator. Show all work for credit.

Solve. Use improper fractions where appropriate. (No decimals or mixed numbers).

1. $4(3n + 5) - 2(2 - 4n) = 6 - 2n$

2. $3x - 12 - 5x = 5 - 6x - 9$

3. $\frac{2}{3}x - \frac{1}{6} = 7$

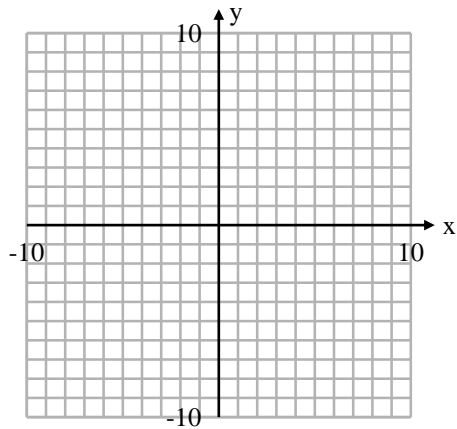
4. $\frac{2}{15} + \frac{3}{5}x = \frac{7}{15} + \frac{2}{3}x$

5. $2(4x) - (x - 1) = 2(1 - x)$

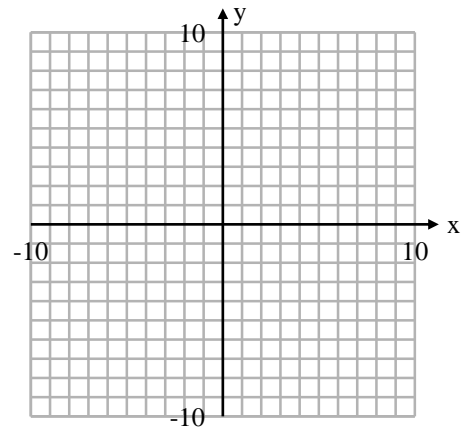
6. $\frac{2}{3}a - \frac{5}{6} = \frac{1}{2}a - 4$

Graph each line:

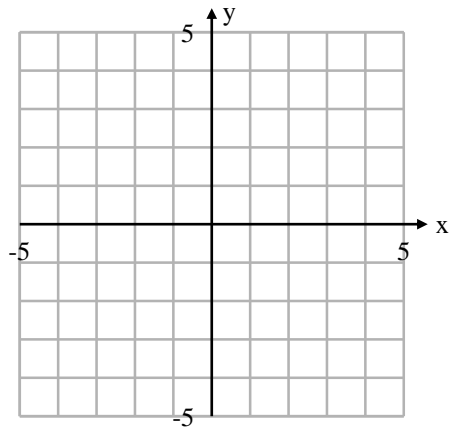
7. $y = -\frac{2}{5}x - 3$



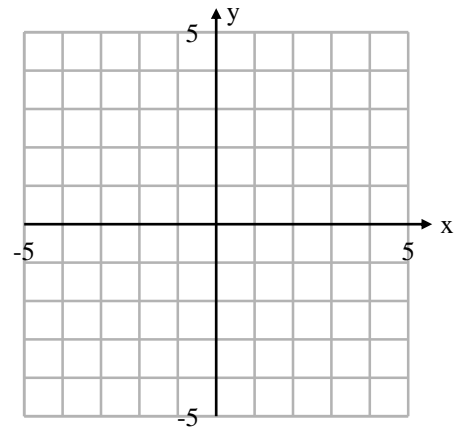
8. $3x - 2y = 12$



9. $y = 3$



10. $x = -1$



Find the slope of each line:

11. $y = -2x - 4$

12. a horizontal line

13. a vertical line

14. $y = -x$

15. The line passing through A (-2, 3) and B (2,-4)

Write the equation of the line described.

<p>16. Slope 2, y intercept -4 (Show answer in slope-intercept form.)</p>	<p>17. Passing through the points $(-1,3)$ and $(5, 7)$ (Show answer in standard form.)</p>
<p>18. With undefined slope, passing through $(2, 1)$</p>	<p>19. Slope $-\frac{3}{5}$, passing through the point $(5, -2)$ (Show answer in point-slope form.)</p>

Solve each system of equations using addition (elimination) or substitution.

<p>20. $2x - 3y = 8$ $x + y = 4$</p>	<p>21. $3y - 2x = 4$ $\frac{1}{6}(3y - 4x) = 1$</p>
<p>22. $5x - 2y = 3$ $2x + 7y = 9$</p>	<p>23. $2x - 3y = 1$ $3x + 5y = 11$</p>

Multiply.

24. $(x - 3)(x + 7)$	25. $(2x - 1)(5x + 3)$
26. $(x + 8)^2$	27. $(2x - 3)^2$
28. $(x - 2)(x + 2)$	29. $(7m - 1)(2m - 3)$

Factor.

30. $a^2 + 9a + 18$	31. $2a^2 + a - 15$
32. $3y^2 - 14y - 24$	33. $b^2 - 8b + 16$
34. $x^2 - 81$	35. $16p^2 - 25$

Solve by factoring.

36. $3x^2 + 13x - 10 = 0$	37. $2a^2 + 5a = -4(a + 1)$	38. $a^2 - 4a = 21$
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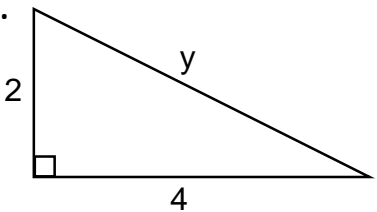
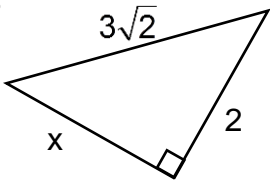
Solve using the Quadratic Formula. Give exact answers in simplified radical form.

39. $a^2 - 3a - 6 = 0$	40. $2a^2 + 5a + 1 = 0$
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Simplify.

41. $\sqrt{45}$	42. $3\sqrt{72}$
43. $5\sqrt{32}$	44. $7\sqrt{3} - 3\sqrt{3}$
45. $3\sqrt{6} + \sqrt{24}$	46. $7\sqrt{8} \cdot 5\sqrt{2}$

Use the Pythagorean Theorem to find the value of the variable. Give exact answers in simplified radical form.

47.  <p>A right-angled triangle with a vertical leg of length 2, a horizontal leg of length 4, and a hypotenuse of length y. A right angle symbol is at the bottom-left vertex.</p>	48.  <p>A right-angled triangle with a hypotenuse of length $3\sqrt{2}$, a leg of length 2, and a leg of length x. A right angle symbol is at the bottom-right vertex.</p>
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49. In little league baseball, the distance of the paths between each pair of consecutive bases is 60 feet and the paths form right angles. How far does the ball need to travel if it is thrown from home plate directly to second base?

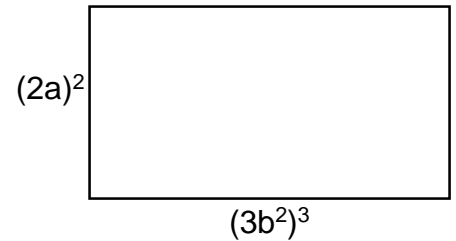
Simplify. Use only positive exponents in your answers.

50. $a^5 \cdot a \cdot a^{-2}$	51. $\frac{16x^2y}{2xy}$
52. $(2n)^4 \cdot (3n)^2$	53. $(3x^2y)^2 \cdot (-4xy^3)$
54. $4^0 c^{-3}$	55. $\left(\frac{2xy^4}{x^2}\right)^3$

56. Find the area and perimeter of the rectangle.

A = _____

P = _____



Solve each literal equation for the stated variable.

57. Solve $P = 2l + 2w$ for w	58. Solve $A = \frac{1}{2}bh$ for h
59. Solve $V = \pi r^2 h$ for h	60. Solve $F = \frac{9}{5}C + 32$ for C