

PreAP Geometry



Summer Assignment

PreAP Geometry - Summer Assignment

PreAP 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 the beginning of PreAP 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*

For your benefit, the assignment includes the answers. (Hint: 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).

Bring this completed review packet to the first class meeting (all work must be shown). It will count as a homework grade.

We look forward to meeting you in August!

Regards,

The CISD PreAP Geometry Team

PreAP Geometry
Summer Assignment – Algebra I Review

Name _____

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

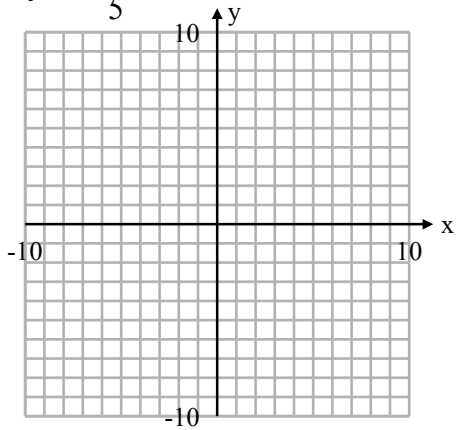
_____ 4. $\frac{2}{15} + \frac{3}{5}x = \frac{7}{15} + \frac{2}{3}x$

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

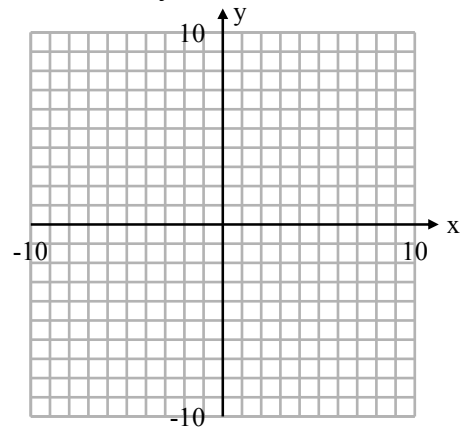
_____ 6. $\frac{2}{3}a - \frac{5}{6} = \frac{1}{2}a - 4$

Graph each line:

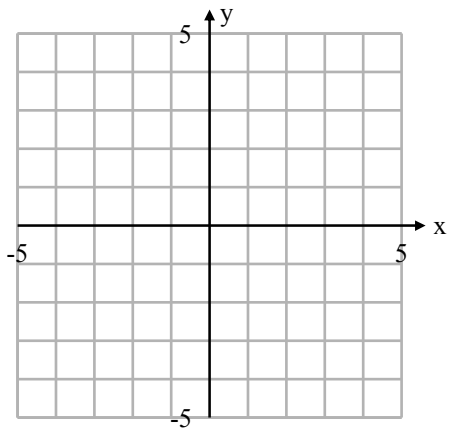
7. $y = -\frac{2}{5}x - 3$



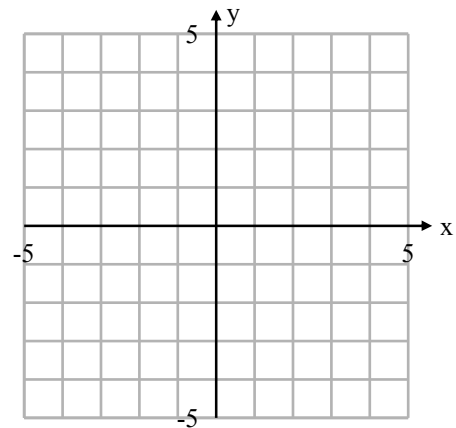
8. $3x - 2y = 12$



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.

_____ 16. Slope 2, y intercept -4
(Show answer in slope-intercept form.)

_____ 17. Passing through the points $(-1,3)$ and $(5, 7)$
(Show answer in standard form.)

_____ 18. With undefined slope, passing through $(2, 1)$

_____ 19. Slope $-\frac{3}{5}$, passing through the point $(5, -2)$
(Show answer in point-slope form.)

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

_____ 20. $2x - 3y = 8$
 $x + y = 4$

_____ 21. $3y - 2x = 4$
 $\frac{1}{6}(3y - 4x) = 1$

_____ 22. $5x - 2y = 3$
 $2x + 7y = 9$

_____ 23. $2x - 3y = 1$
 $3x + 5y = 11$

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. $a^2 - 4a = 21$

**Solve using the Quadratic Formula.
Give exact answers in simplified radical form.**

_____ 39. $a^2 - 3a - 6 = 0$

_____ 40. $2a^2 + 5a + 1 = 0$

Simplify.

_____ 41. $\sqrt{45}$

_____ 42. $3\sqrt{72}$

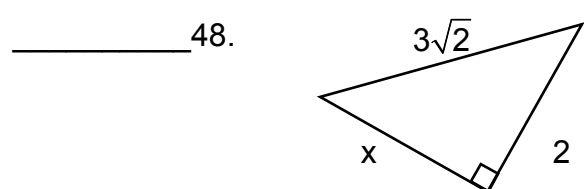
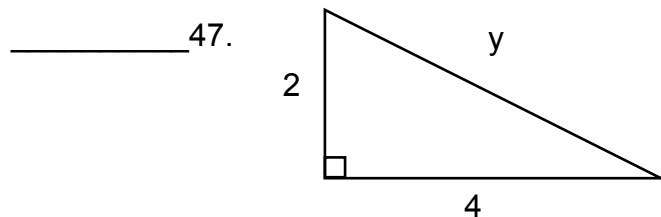
_____ 43. $5\sqrt{32}$

_____ 44. $7\sqrt{3} - 3\sqrt{3}$

_____ 45. $3\sqrt{6} + \sqrt{24}$ (Hint: simplify before adding.)

_____ 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.



_____ 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.

_____ 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. Find the area and perimeter of the rectangle.

A = _____

P = _____

$(2a)^2$



$(3b^2)^3$

Solve each literal equation for the stated variable.

_____ 55. Solve $P = 2l + 2w$ for w

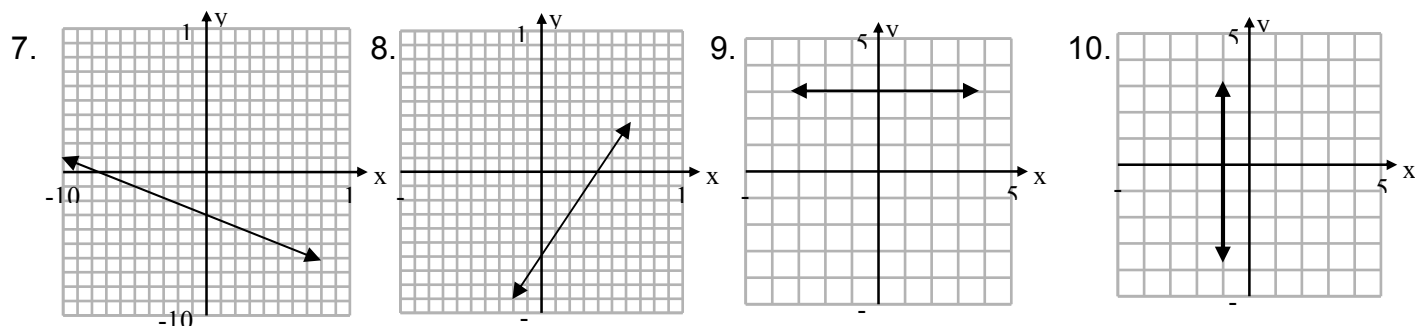
_____ 56. Solve $A = \frac{1}{2}bh$ for h

_____ 57. Solve $V = \pi r^2h$ for h

_____ 58. Solve $F = \frac{9}{5}C + 32$ for C

Key:

1. $-\frac{5}{11}$ 2. 2 3. $\frac{43}{4}$ 4. -5 5. $\frac{1}{9}$ 6. -19



11. -2 12. 0 13. Undefined 14. -1 15. $-\frac{7}{4}$ 16. $y = 2x - 4$
 17. $2x - 3y = -11$ 18. $x = 2$ 19. $y + 2 = -\frac{3}{5}(x - 5)$ 20. (4, 0)

21. $(-1, \frac{2}{3})$ 22. (1, 1) 23. (2, 1) 24. $x^2 + 4x - 21$

25. $10x^2 + x - 3$ 26. $x^2 + 16x + 64$ 27. $4x^2 - 12x + 9$

28. $x^2 - 4$ 29. $14m^2 - 23m + 3$ 30. $(a + 6)(a + 3)$ 31. $(2a - 5)(a + 3)$

32. $(3y + 4)(y - 6)$ 33. $(b - 4)^2$ 34. $(x - 9)(x + 9)$ 35. $(4p - 5)(4p + 5)$

36. $x = \frac{2}{3}$ or $x = -5$ 37. $a = -4$ or $a = -\frac{1}{2}$ 38. $a = 7$ or $a = -3$

39. $\frac{3 \pm \sqrt{33}}{2}$ 40. $\frac{-5 \pm \sqrt{17}}{4}$ 41. $3\sqrt{5}$ 42. $18\sqrt{2}$

43. $20\sqrt{2}$ 44. $4\sqrt{3}$ 45. $5\sqrt{6}$ 46. 140

47. $2\sqrt{5}$ 48. $\sqrt{14}$ 49. $60\sqrt{2}$ ft.

50. a^4 51. $8x$ 52. $144n^6$ 53. $-36x^5y^5$

54. $A = 108a^2b^6$ $P = 8a^2 + 54b^6$ 55. $w = \frac{P - 2I}{2}$ 56. $h = \frac{2A}{b}$

57. $h = \frac{V}{\pi r^2}$ 58. $C = \frac{5}{9}(F - 32)$