

Honors Geometry Summer Packet

All concepts on this worksheet are prerequisite knowledge from middle school math and Algebra. You are expected to know them without review the first day of class. Show all work.

You will not use Desmos in Geometry. Make sure that you can solve all problems without the help of an online tool.

Solve each problem and leave your answer as a reduced fraction.

$$1. \frac{2}{3} + \frac{1}{6} =$$

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

$$3. \frac{19}{4} + \frac{11}{2} =$$

$$4. \frac{2}{3} \left(\frac{1}{6} \right) =$$

$$5. \frac{2*1}{3*6} =$$

$$6. \frac{2}{7} \left(\frac{7}{6} \right) =$$

$$7. \frac{2}{3} \div \frac{5}{6} =$$

$$8. \frac{\frac{1}{4}}{\frac{3}{8}} =$$

$$9. \frac{18x}{4} = \frac{36}{16}$$

$$10. \frac{10}{3x} = \frac{40}{12}$$

$$11. \frac{x}{-6} = \frac{-5}{x+1}$$

Rounding

12. A student measured a side length to be 4.46 cm. Round their answer to the nearest tenth of a centimeter.

13. To solve for an angle measure, a student wrote the equation $2x = 144.98^\circ$. Solve the equation and round to the nearest degree.

14. Given $x = \frac{51}{7}$, round x to the nearest hundredth.

15. Given a circle with radius 4 in, what is the circumference, rounded to the nearest tenth of an inch?

16. Given $2x = \sqrt{10}$ and $3y = \sqrt{18}$, write an inequality comparing x and y .

17. Given $x = \sqrt{5}$, find a decimal approximation for x rounded to the nearest tenth, and write an inequality comparing x and $\frac{9}{4}$

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Simplify each radical expression:

18. $\sqrt{48}$

19. $\sqrt{75}$

20. $\sqrt{72}$

21. $\sqrt{108}$

22. $\sqrt{24}$

23. $\sqrt{200}$

24. $\sqrt{900}$

25. $\sqrt{48} + \sqrt{12}$

26. $(\sqrt{48})^2$

27. $(3\sqrt{2})^2$

28. $(2x\sqrt{5})^2$

29. $\sqrt{2}(\sqrt{5})$

30. $\sqrt{3}(\sqrt{6})$

31. $\frac{9\sqrt{12}}{3\sqrt{6}} =$

32. $\frac{2\sqrt{3}}{8\sqrt{15}} =$

Solve each equation:

33. $-20 = -4x - 6x$

34. $8p - 5(p + 3) = (7p - 1)3$

35. $p - 1 = 5p + 3p - 8$

Basic factoring trinomials

Factor each polynomial, then solve for x.

36. $x^2 - 6x - 40 = 0$

37. $x^2 - 3x = 28$

38. $x^2 + 11x = 80$

39. $2x^2 + 8x = 10$

40. $x^2\sqrt{3} + 2x\sqrt{3} = 24\sqrt{3}$

41. $x^2 + 2x = 255$

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Solve by Completing the square:

42. $x^2 + 20x = 0$

43. $y^2 + 8y = 0$

Identify whether the lines are parallel, perpendicular, or neither, then solve the systems of equations.

44. $y = 3x - 2$
 $y = \frac{-1}{3}x + \frac{5}{3}$

45. $4x - 2y = -14$
 $3x - y = -8$

46. $x = 5$
 $y = -2$

47. $x - 3y = -4$
 $2x + 6y = 5$

48. $y = -5x + 5$
 $25x + 5y = 5$

49. $y = \frac{3}{4}x - 6$
 $3x - 4y = 1$

Write the slope-intercept form of the equation of the line through the given point with the given slope.

50. through: $(-5, 1)$, slope = $4/5$

51. through: $(5, 4)$, slope undefined

Write the slope-intercept form of the equation of the line through the given points.

52. through: $(-2, -3)$ and $(-1, 2)$

53. through: $(-3, 1)$ and $(0, -3)$