

Trigonometry R

Summer Practice Problems

Purpose: To provide students with an opportunity to review the basic concepts and skills learned in Algebra IR, Geometry R, and Algebra IIR so that they are better prepared to begin their work in Trigonometry. These problems will not be collected, graded or reviewed once school begins in September.

For Help: www.algebra.com; and www.mathpower.com

Evaluate and simplify each expression:

$$1. \frac{|-5|}{-5} =$$

$$2. \frac{81 - (90 - 9)}{5} =$$

$$3. \frac{5}{8} - \frac{5}{12} + \frac{1}{6} =$$

$$4. \frac{3}{5} : 3 \quad (6) \left(\frac{4}{8} \right) =$$

$$5. (-3ab^4)(4a^2b^{-3}) =$$

$$6. (7x^3 - 2x^2 + 8) - (3x^3 + 4) =$$

$$7. 3a(4a^{289})^0 =$$

$$8. \frac{12a^3b^{-4}}{4a^{-2}b} =$$

$$9. (x - 6)(x + 5) =$$

$$10. (2x - 3)^2 =$$

Factor:

$$11. 9x^2 - 16y^2 =$$

$$12. 16x^2 + 8x + 1 =$$

$$13. 2x^2 + x - 15 =$$

$$14. x^2 - x - 6 =$$

$$15. x^2 + 8x + 12 =$$

State the domain and the range of each function:

$$16. f(x) = \sqrt{x + 1}$$

$$17. f(x) = x^2 + 5$$

$$18. f(x) = x + 5$$

$$19. f(x) = \frac{3x - 1}{(x + 2)(x - 5)}$$

Solve each equation:

20. $4x^2 = 12$

21. $(x - 3)^2 = 7$

22. $3x - 6 = 0$

23. $x^2 + 3x = 9$

24. $8x^2 - 24x + 18 = 0$

25. $\frac{2}{x+2} = \frac{-x}{10}$

26. $2^x - 2 = 6$

27. $3^{x-6} = 81$

Find the x and y intercepts:

28. $y = x^3 - 4x$

29. $y^2 = x + 4$

For #30-32, let $f(x) = 2x + 3$ and $g(x) = x^2 - 1$, find:

30. $f(2) =$

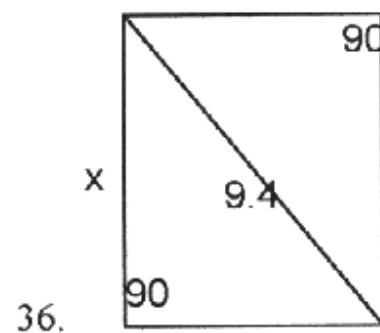
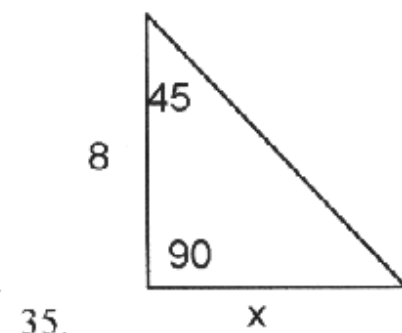
31. $f(g(x)) =$

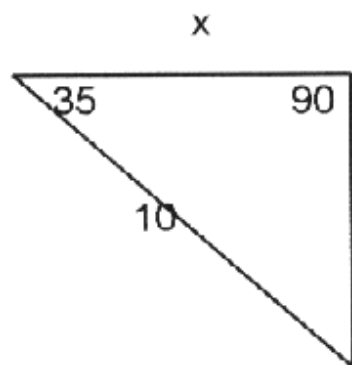
32. $g(f(-4)) =$

33. State the Pythagorean Theorem in your own words.

34. In a right triangle, the measures of the legs are 8 and $x+7$, and the measure of the hypotenuse is $x+10$. Find the value of x .

For #35-37, find the value of x .





37.

Graph the following functions on the graph paper provided:

38. $f(x) = 3 - 3x$

39. $f(x) = x^2 - 1$

40. $f(x) = -2(x + 1)^2 + 3$

41. $g(x) = 2^x - 1$

42. The dollar value of a product in 1995 is \$85, and the product will increase in value at an expected rate of \$3.75 per year.

- a) Write a linear equation that gives a dollar value V of the product in terms of the year t . (Let $t = 5$ represent 1995.)
- b) Graph the linear model that you came up with on the graph paper provided at the end of the packet.
- c) Estimate the value of the product in 2003.