

Algebra 2CP
Chapter 7 YOU CAN...

❖ **Add, subtract, multiply and divide functions**

1. $f(x) = 8x - 3; g(x) = 4x + 5$

2. $f(x) = 2x - 1; g(x) = 3x^2 + 11x - 4$

❖ **Find the inverse of each relation and function**

3. $\{(0, 3), (4, 2), (5, -6)\}$

4. $f(x) = \frac{2}{3}x - 1$

5. $f(x) = 2x - 3$

❖ **Determine whether each pair of functions are inverse functions**

6. $f(x) = 4x - 5; g(x) = \frac{1}{4}x - \frac{5}{16}$

7. $f(x) = \frac{3x + 2}{7}; g(x) = \frac{7x - 2}{3}$

❖ **Graph a square root function and give its domain and range**

8. $y = \frac{1}{3}\sqrt{x + 2}$

9. $y = \sqrt{5x - 3}$

10. $y = 4 + 2\sqrt{x - 3}$

11. $y = 2 + \sqrt{x - 1}$

❖ **Add, subtract, multiply and divide with radicals**

12. $5\sqrt{12} - 3\sqrt{75}$

13. $6\sqrt[5]{11} - 8\sqrt[5]{11}$

14. $3\sqrt{5} + 6\sqrt{5}$

15. $\sqrt{54} - \sqrt{24}$

16. $(5 + \sqrt{2})(3 + \sqrt{3})$

17. $(2 + \sqrt{5})(2 - \sqrt{5})$

18. $(8 + \sqrt{11})^2$

19. $(3 + \sqrt{6})(3 - \sqrt{6})$

20. $\sqrt{\frac{3m^3}{24n^5}}$

21. $\frac{\sqrt{18}}{\sqrt{32}}$

22. $2\sqrt[3]{\frac{r^5}{2s^2t}}$

23. $\sqrt[3]{\frac{4}{7}}$

❖ **Use a conjugate to rationalize the denominator of a fraction that contains a radical**

24. $\frac{5}{3 - \sqrt{10}}$

25. $\frac{\sqrt{5}}{1 + \sqrt{3}}$

26. $\frac{-2 + \sqrt{7}}{2 + \sqrt{7}}$

27. $\frac{1 - \sqrt{3}}{1 + \sqrt{8}}$

❖ **Simplify radicals**

28. $\sqrt[4]{a^{16}b^8}$

29. $\sqrt[5]{p^{25}q^{15}r^5s^{20}}$

30. $\pm\sqrt{16m^6n^2}$

31. $\sqrt[5]{c^5d^{15}}$

32. $\sqrt[4]{16m^8}$

❖ **Simplify expressions with fractional powers**

33. $7^{5/9} \cdot 7^{4/9}$

34. $32^{2/3} \cdot 32^{3/5}$

35. $(k^{8/5})^5$

36. $x^{2/5} \cdot x^{8/5}$

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❖ Apply the laws of exponents to fractional powers

37. $2401^{1/4}$

38. $27^{4/3}$

39. $(-32)^{2/5}$

40. $-81^{3/4}$

41. $(-125)^{-2/3}$

❖ Solve radical equations

42. $(5n - 1)^{1/2} = 0$

43. $(7x - 6)^{1/3} + 1 = 3$

44. $\sqrt{-2x + 14} - 6 = -4$

45. $10 - \sqrt{x + 7} = 3$

46. $\sqrt{d + 3} + \sqrt{d + 7} = 4$

47. $\sqrt{2x + 5} - \sqrt{9 + x} = 0$

48. $\sqrt{3x - 8} + 1 = 3$