

More Power Rule and Chain Rule Answer Key

Find the derivative.

$$1. f'(x) = -\frac{7}{4x^{3/4}}$$

$$2. f'(x) = 3x^2 + \frac{1}{3\sqrt[3]{x^2}}$$

$$3. f'(x) = \frac{2}{\sqrt{x}} - \frac{3}{x^4}$$

$$4. f'(x) = \frac{12}{5\sqrt[5]{x^2}} - \frac{20}{3\sqrt[3]{x^7}}$$

$$5. f'(x) = \frac{1}{2\sqrt{x+2}}$$

$$6. f'(x) = \frac{1}{3\sqrt[3]{(x+7)^2}}$$

$$7. f'(x) = \frac{-10}{(x+4)^{8/3}}$$

$$8. f'(x) = \frac{-6}{(x+1)^3}$$

$$9. f'(x) = \frac{-1}{(x+5)^2}$$

$$10. f'(x) = -20(5x-3)$$

$$11. f'(x) = 60(3x-5)^9$$

$$12. f'(x) = 12(8x-3)(4x^2-3x-9)^3$$

$$13. f'(x) = 4(12x^2-3)(4x^3-3x+2)^3$$

$$14. f'(x) = \frac{12x^3}{5\sqrt[5]{(3x^4-1)^4}}$$

$$15. f'(x) = \frac{6x^2-1}{3\sqrt[3]{(2x^3-x+1)^2}}$$

$$16. f'(x) = \frac{-5}{x^2} + \frac{2}{x^3}$$

$$17. f'(x) = \frac{-1}{x^2} + \frac{2}{x^{3/2}}$$

$$18. f'(x) = 2\left(-1 - \frac{x}{2} - \frac{x^2}{4}\right)\left(-\frac{1}{2} - \frac{1}{2}x\right)$$

$$19. y+1 = \frac{1}{2}(x+1)$$

$$20. y = -81x - 189$$

$$21. 1920x + y = 896$$

$$22. \text{When } x = 1: y - 2 = 4(x - 1) \text{ and when } x = -1: y + 2 = 4(x + 1)$$

$$23. x\text{-int} : \left(-\frac{4}{3}, 0\right) \text{ and } y\text{-int} : (0, 16)$$

$$24. -8$$

$$25. \frac{5}{64}$$

$$26. -6$$

$$27. -\frac{3}{2}$$

$$28. 0$$

$$29. -5\pi$$