

P-33 Rewrite each expression in exponential form.

1. $\sqrt{x} = x^{\frac{1}{2}}$

4. $\left(\frac{1}{\sqrt[4]{x+5}}\right)^2 = \left(\frac{1}{(x+5)^{\frac{1}{4}}}\right)^2 = \left((x+5)^{-\frac{1}{4}}\right)^2 = (x+5)^{-\frac{1}{2}}$

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

5. $(\sqrt[10]{x})^3 = (x^{\frac{1}{10}})^3 = x^{\frac{3}{10}}$

3. $\sqrt[5]{7x-3} = (7x-3)^{\frac{1}{5}}$

6. $(\sqrt[3]{x})^{10} = (x^{\frac{1}{3}})^{10} = x^{10/3}$

Rewrite each expression in radical form.

7. $(x-1)^{1/2} = \sqrt{x-1}$

9. $(x^{1/3})^2 = (\sqrt[3]{x})^2$ } both are $x^{2/3}$

8. $(x^3+2x-4)^{-1/5} = \frac{1}{\sqrt[5]{x^3+2x-4}}$

10. $(x^2)^{1/3} = \sqrt[3]{x^2}$

Find the value of each expression.

11. $9^{1/2} = \sqrt{9} = 3$

16. $(16+9)^{1/2} = \sqrt{16+9} = \sqrt{25} = 5$

12. $27^{1/3} = \sqrt[3]{27} = 3$

17. $1000^{1/3} = \sqrt[3]{1000} = 10$

13. $16^{-1/4} = \frac{1}{\sqrt[4]{16}} = \frac{1}{2}$

18. $32^{2/5} = (32^{1/5})^2 = (\sqrt[5]{32})^2 = (2)^2 = 4$

14. $8^{1/3} = \sqrt[3]{8} = 2$

19. $4^{-3/2} = \frac{1}{(4^{1/2})^3} = \frac{1}{(\sqrt{4})^3} = \frac{1}{2^3} = \frac{1}{8}$

15. $(-8)^{1/3} = \sqrt[3]{-8} = -2$

20. $(-32)^{2/5} = (\sqrt[5]{-32})^2 = (-2)^2 = 4$