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Radicals and Rational Exponents Answers

Section I. Write in radical format

1. $36^{\frac{1}{2}} = \sqrt{36}$

2. $125^{\frac{1}{3}} = \sqrt[3]{125}$

3. $16^{\frac{1}{2}} = \sqrt{36}$

4. $343^{\frac{1}{3}} = \sqrt[3]{343}$

5. $32^{\frac{1}{5}} = \sqrt[3]{125}$

6. $1000^{\frac{1}{3}} = \sqrt[3]{1000}$

7. $64^{\frac{2}{3}} = \sqrt[3]{64}^{\,2}$ *or* $\sqrt[3]{64^2}$

8. $216^{\frac{2}{3}} = \sqrt[3]{125}^{\,2}$ *or* $\sqrt[3]{125^2}$

9. $32^{\frac{3}{5}} = \sqrt[5]{32}^{\,3}$ *or* $\sqrt[5]{32^3}$

10. $64^{\frac{5}{6}} = \sqrt[6]{32}^{\,5}$ *or* $\sqrt[6]{32^5}$

Section II. Write in exponential format

11. $\sqrt{121} = 121^{\frac{1}{2}}$

12. $\sqrt[4]{625} = 121^{\frac{1}{4}}$

13. $\sqrt{289} = 289^{\frac{1}{2}}$

14. $\sqrt[3]{512} = 512^{\frac{1}{3}}$

15. $\left(\sqrt[3]{512}\right)^4 = 512^{\frac{4}{3}}$

16. $\left(\sqrt[3]{8}\right)^5 = 8^{\frac{3}{5}}$

17. $\left(\sqrt[4]{256}\right)^3 = 256^{\frac{3}{4}}$

18. $\left(\sqrt{9}\right)^3 = 9^{\frac{3}{2}}$

19. $\left(\sqrt[6]{1{,}000{,}000}\right)^5 = 1{,}000{,}000^{\frac{5}{6}}$

20. $\left(\sqrt[3]{343}\right)^2 = 121^{\frac{1}{2}}$