

SM2 3.1: Fractional Exponents

Problems: Write each expression in exponential form.

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|----------------------|------------------------------------|-------------------------|----------------------------------|-------------------------|----------------------------------|
| 1) $(\sqrt{5})^3$ | $5^{3/2}$ | 2) $(\sqrt[3]{10})^5$ | $10^{5/3}$ | 3) $\sqrt[3]{(6)^2}$ | $6^{2/3}$ |
| 4) $\sqrt[4]{3^7}$ | $3^{7/4}$ | 5) $\sqrt{7^5}$ | $7^{5/2}$ | 6) \sqrt{n} | $n^{1/2}$ |
| 7) $\sqrt[3]{6v^2}$ | $(6v^2)^{1/3}$ or $6^{1/3}v^{2/3}$ | 8) $\sqrt{7b}$ | $(7b)^{1/2}$ or $7^{1/2}b^{1/2}$ | 9) $\sqrt[3]{7x}$ | $(7x)^{1/3}$ or $7^{1/3}x^{1/3}$ |
| 10) $3^{2/5}$ | $\sqrt[5]{3^2}$ | 11) $5^{4/3}$ | $\sqrt[3]{5^4}$ | 12) $10^{1/4}$ | $\sqrt[4]{10}$ |
| 13) $6^{5/2}$ | $\sqrt{6^5}$ | 14) $7^{1/3}$ | $\sqrt[3]{7}$ | 15) $(3m)^{7/5}$ | $\sqrt[5]{(3m)^7}$ |
| 16) $x^{1/2}$ | \sqrt{x} | 17) $(6p)^{2/3}$ | $\sqrt[3]{(6p)^2}$ | 18) $(2n)^{1/2}$ | $\sqrt{2n}$ |
| 19) $81^{1/2}$ | | 20) $1000^{5/3}$ | | 21) $81^{5/4}$ | |
| | 9 | | 100000 | | 243 |
| 22) $216^{2/3}$ | | 23) $64^{4/3}$ | | 24) $(8a^3)^{1/3}$ | |
| | 36 | | 256 | | 2a |
| 25) $(216x^3)^{5/3}$ | | 26) $(625k^{12})^{1/4}$ | | 27) $(p^4)^{1/2}$ | |
| | $7776x^5$ | | $5k^3$ | | p^2 |
| 28) $(x^5)^{-2/5}$ | | 29) $(x^9)^{-4/3}$ | | 30) $(100000r^5)^{6/5}$ | |
| | $\frac{1}{x^2}$ | | $\frac{1}{x^{12}}$ | | $1000000r^6$ |