Practice Quiz Answers

#1. $36^{\frac{1}{2}}$ $b^{\frac{m}{n}} = \sqrt[n]{b^m}$

$b=36$, $m=1$, $n=2$

$= \sqrt[2]{36^1} = \sqrt{36}$

#2. $y^{\frac{2}{3}}$

$b=y$, $m=2$, $n=3$

$= \sqrt[3]{y^2}$

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#3 $\sqrt[3]{17^1}$ $\sqrt[n]{b^m} \rightarrow b^{\frac{m}{n}}$

$b=17$, $m=1$, $n=3$

$= 17^{\frac{1}{3}}$

#4 $\sqrt[5]{5^1 a^1 b^2}$ $n=5$

$= 5^{\frac{1}{5}} a^{\frac{1}{5}} b^{\frac{2}{5}}$

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#5: Simplify $\sqrt{54 x y^6 z^5}$

$= \sqrt{2 \cdot 3 \cdot 3 \cdot 3 \cdot x \cdot y \cdot y \cdot y \cdot y \cdot y \cdot y \cdot z \cdot z \cdot z \cdot z \cdot z}$

$= 3 y^3 z^2 \sqrt{6xz}$

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#6. $\sqrt[3]{90 a^4 b^7}$

$= \sqrt[3]{2 \cdot 3 \cdot 3 \cdot 5 \cdot a \cdot a \cdot a \cdot a \cdot b \cdot b \cdot b \cdot b \cdot b \cdot b \cdot b}$

$= a b^2 \sqrt[3]{90 a b}$

#7. $4\sqrt{18} + 5\sqrt{50}$

$= 4\sqrt{2 \cdot 3 \cdot 3} + 5\sqrt{2 \cdot 5 \cdot 5}$

$= 12\sqrt{2} + 25\sqrt{2}$

$= 37\sqrt{2} \approx 52.3$

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#8. $\sqrt{27} + 2\sqrt{2} - \sqrt{72}$

$= \sqrt{3 \cdot 3 \cdot 3} + 2\sqrt{2} - \sqrt{2 \cdot 2 \cdot 3 \cdot 3 \cdot 2}$

$= 3\sqrt{3} + 2\sqrt{2} - 6\sqrt{2}$

$= 3\sqrt{3} - 4\sqrt{2}$

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#9. $\sqrt{3}(3\sqrt{12} + 5)$

$= 3\sqrt{36} + 5\sqrt{3}$

$= 18 + 5\sqrt{3}$

#12. $\frac{7}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{7\sqrt{5}}{5}$

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#13 $\frac{6}{3-\sqrt{6}} \cdot \frac{(3+\sqrt{6})}{(3+\sqrt{6})}$

$= \frac{18+6\sqrt{6}}{9-6} = \frac{18+6\sqrt{6}}{3}$

$= 6+2\sqrt{6}$

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#14 $2+\sqrt{7}$

$= 2-\sqrt{7}$

#15 $\sqrt{3}-\sqrt{5}$

$\sqrt{3}+\sqrt{5}$

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#16 $\frac{1+\sqrt{3}}{3-\sqrt{5}} \cdot \frac{(3+\sqrt{5})}{(3+\sqrt{5})}$

$= \frac{3+\sqrt{5}+3\sqrt{3}+\sqrt{15}}{9-5}$

$= \frac{3+\sqrt{5}+3\sqrt{3}+\sqrt{15}}{4}$ ✓

$= \frac{1}{4}(3+\sqrt{5}+3\sqrt{3}+\sqrt{15})$ ✓

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