

Multiple Rules Practice - Rewrite each in simplest radical form.

<p>1. $4^2 \cdot 8^2$ $2^{2(2)} \cdot 2^{3(2)} = 2^4 \cdot 2^6$ 2^{10}</p>	<p>2. $27^{1/4} \cdot 9^{1/4}$ $3^{3(1/4)} \cdot 3^{2(1/4)}$ $3^{3/4} \cdot 3^{2/4} = 3^{5/4}$</p>	<p>3. $16^{2/3} \cdot 8^{1/2}$ $2^{4(2/3)} \cdot 2^{3(1/2)}$ $2^{8/3} \cdot 2^{3/2} = 2^{25/6}$</p>	<p>4. $36^{1/2} \cdot 216^{1/2}$ $6^{2(1/2)} \cdot 6^{3(1/2)}$ $6^{5/2}$</p>
<p>5. $5^3 \cdot 25^2$</p>	<p>6. $3^3 \cdot 9$</p>	<p>7. $27^{1/4} \cdot 3^{1/4}$</p>	<p>8. $36^{1/2} \cdot 6^4$</p>
<p>9. $\left(\frac{125}{64}\right)^{-1/3}$ $\frac{4}{5}$</p>	<p>10. $\left(\frac{w^3}{32w}\right)^{2/5}$ $\frac{\sqrt[5]{w^4}}{4}$</p>	<p>11. $\left(\frac{y^5}{y^{1/2} \cdot y^{3/4}}\right)$ $y^3 \cdot \sqrt[4]{y^3}$</p>	<p>12. $\left(\frac{16c^{-8}d^3}{c^4d^5}\right)^{1/2}$ $\frac{4}{c^6d}$</p>
<p>13. $\sqrt{\frac{40x^2}{x^{10}}}$ $\frac{2\sqrt{10}}{x^4}$</p>	<p>14. $\sqrt{\frac{25}{y^{12}}}$ $\frac{5}{y^6}$</p>	<p>15. $\sqrt[4]{\frac{162d^{21}}{2d^2}}$ $3d^4 \sqrt[4]{d^3}$</p>	<p>16. $7\sqrt{3} - \sqrt{12}$ $5\sqrt{3}$</p>
<p>17. $2\sqrt{63} - 11\sqrt{28} + 5\sqrt{21}$ $6\sqrt{7} - 22\sqrt{7} + 5\sqrt{21}$ $-16\sqrt{7} + 5\sqrt{21}$</p>	<p>18. $15xy^4\sqrt{9xy} - \sqrt{9x^5y^5}$ $14xy^4\sqrt{9xy}$</p>	<p>19. $(81x^{8/3}y^4)^{3/4}$ $27x^2y^3$</p>	<p>20. $(4ab^3)^{3/2}$ $8ab^4\sqrt{ab}$</p>
<p>21. $\left(\frac{a^{12}b^5}{27b^2}\right)^{-1/3}$ $\frac{3}{a^4b}$</p>	<p>22. $\sqrt[5]{x^{20}} \cdot \sqrt[4]{x^{12}}$ x^7</p>	<p>23. $\sqrt[3]{\sqrt{x^4}}$ $\sqrt[3]{x^2}$</p>	<p>24. $\sqrt[3]{25} \cdot \sqrt[6]{25}$ $25^{1/3} \cdot 25^{1/6} = 25^{2/6} \cdot 25^{1/6} = 25^{3/6} = 25^{1/2} = \sqrt{25} = 5$</p>
<p>25. $a^{2/3}b^{9/6}c^{3/2}$ $bc\sqrt[6]{a^4b^3c^3}$</p>	<p>26. $\frac{\sqrt[5]{y^{15}}}{\sqrt[3]{32y^8} \cdot \sqrt[2]{y^2}} = \frac{\sqrt[5]{y^{15}}}{\sqrt[3]{32y^{10}}}$ $\frac{y}{2}$</p>	<p>27. $\left(\frac{125x^{1/3}y}{64x^{10/3}y^4}\right)^{-1/3}$ $\frac{4xy}{5}$</p>	<p>28. $\left(\frac{\sqrt{x^5}}{\sqrt{4x}}\right)^{1/2} = \left(\frac{\sqrt{x^4}}{\sqrt{4}}\right)^{1/2}$ $= \left(\frac{x^2}{2}\right)^{1/2}$ $= \frac{x}{\sqrt{2}} \cdot \frac{\sqrt{2}}{\sqrt{2}}$</p>

$\sqrt{\frac{x\sqrt{2}}{2}} \cdot 6$