Simplify. Give answers to #1 and 2 in exponential form and answers to #3-18 as an integer or simplified radical. Assume all radicals are defined.		
1. $\left(2^{1/4} \cdot 4^{1/3} \right)^{6}$	**2.** $\dfrac{x^{5/3}\, y}{x\, y^{-1/2}}$	**3.** $\sqrt[5]{1215 x^{15}\, y^{9}}$
4. $\sqrt[4]{32 x^{5}\, y^{8}\, z^{10}}$	**5.** $\sqrt{6xyz} \cdot \sqrt{12 y^{3}\, z^{4}}$	**6.** $\sqrt[3]{4x^{3}\, y} \cdot \sqrt[3]{20 x^{4}\, y^{5}}$
7. $3\sqrt[4]{24 x^{6}\, y^{3}} \cdot 5\sqrt[4]{2 x^{5}\, y}$	**8.** $160^{1/2} - 40^{1/2}$	**9.** $5\left(5^{2/7} \right) - 7\left(5^{2/7} \right)$

10. $\sqrt[5]{64} + 5\sqrt[5]{2}$	11. $\sqrt[3]{375} - 2\sqrt[3]{81}$	12. $\sqrt[4]{\dfrac{81x^{12}}{y^4}}$
13. $\dfrac{6}{\sqrt[3]{2x^2}}$	14. $\sqrt[5]{\dfrac{4x^5}{27y^2}}$	15. $\left(\sqrt[3]{6} \cdot \sqrt[4]{6}\right)^{12}$
16. $\dfrac{\sqrt[3]{9} \cdot \sqrt[3]{6}}{\sqrt[6]{4}}$	17. $\sqrt{9a^2 - 9b^2}$	18. $\sqrt{2a^2 + 4a + 2}$

Answers:

1. $2^{11/2}$

2. $x^{2/3} y^{3/2}$

3. $3x^3 y \sqrt[5]{5y^4}$

4. $2xy^2 z^2 \sqrt[4]{2xz^2}$

5. $6y^2 z^2 \sqrt{2xz}$

6. $2x^2 y^2 \sqrt[3]{10x}$

7. $30x^2 y \sqrt[4]{3x^3}$

8. $2\sqrt{10}$

9. $-2\sqrt[7]{25}$

10. $7\sqrt[5]{2}$

11. $-\sqrt[3]{3}$

12. $\dfrac{3\left|x^3\right|}{\left|y\right|}$

13. $\dfrac{3\sqrt[3]{4x}}{x}$

14. $\dfrac{x\sqrt[5]{36y^3}}{3y}$

15. $279{,}936$

16. 3

17. $3\sqrt{a^2 - b^2}$

18. $\left|a+1\right|\sqrt{2}$