Perfect Squares: 1 4 9 16 25 36 49 64 81 100 121 144 169 196 225 256 289 324 361 400 (and then infinitely more of them)

all even exponents

Principles of Algebra Name/Date Clee / Today

ALL PROBLEMS CAN BE COMPLETED ON THIS WORKSHEET

WS 14A.1 - Simplifying Irrational Radicals

#1-14, Simplify each radical expression.

1. $\sqrt{24} = \sqrt{4 \cdot 6}$

$= \boxed{2\sqrt{6}}$

2. $\sqrt{98} = \sqrt{49 \cdot 2}$

$= \boxed{7\sqrt{2}}$

3. $\sqrt{288} = \sqrt{144 \cdot 2}$

$= \boxed{12\sqrt{2}}$

4. $\sqrt{75} = \sqrt{25 \cdot 3}$

$= \boxed{5\sqrt{3}}$

5. $\sqrt{200x^2} = \sqrt{100 \cdot 2 \cdot x^2}$

$= \boxed{10x\sqrt{2}}$

6. $\sqrt{63x^{10}} = \sqrt{9 \cdot 7 \cdot x^{10}}$

$= \boxed{3x^5\sqrt{7}}$

7. $\sqrt{8b^3} = \sqrt{4 \cdot 2 \cdot b^2 \cdot b}$

$= \boxed{2b\sqrt{2b}}$

8. $\sqrt{5c^5} = \sqrt{5 \cdot c^4 \cdot c}$

$= \boxed{c^2\sqrt{5c}}$

9. $-\sqrt{120m^6} = -\sqrt{4 \cdot 30 \cdot m^6}$

$= \boxed{-2m^3\sqrt{30}}$

10. $\sqrt{121d^9} = \sqrt{121 \cdot d^8 \cdot d}$

$= \boxed{11d^4\sqrt{d}}$

11. $\sqrt{4a^2b} = \sqrt{4 \cdot a^2 \cdot b}$

$= \boxed{2a\sqrt{b}}$

12. $\sqrt{50x^6y^9} = \sqrt{25 \cdot 2 \cdot x^6 \cdot y^8 \cdot y}$

$= \boxed{5x^3y^4\sqrt{2y}}$

13. $\sqrt{128x^5} = \sqrt{64 \cdot 2 \cdot x^4 \cdot x}$

$= \boxed{8x^2\sqrt{2x}}$

14. $\sqrt{m^{20}n^{13}p} = \sqrt{m^{20} \cdot n^{12} \cdot n \cdot p}$

$= \boxed{m^{10}n^6\sqrt{np}}$