Math 2 Unit 8 Worksheet 4 **Name:**_____
Simplifying Radical Expressions **Date:**_____ **Per:**_____

[1-21] Express in simplest radical form. All variables represent positive numbers.

1. $\sqrt{20}$
2. $\sqrt{63}$
3. $\sqrt{50m^3n}$
4. $\sqrt{72a^4b^6}$
5. $\sqrt{225k^5}$
6. $5\sqrt{160m^8}$
7. $\sqrt[3]{40d^8}$
8. $\sqrt[3]{500m^3}$
9. $\sqrt[3]{216a^9b^7c^5}$
10. $\sqrt{12} \cdot \sqrt{30}$
11. $3\sqrt{5} \cdot 4\sqrt{8}$
12. $7\sqrt{48} \cdot \sqrt{27}$
13. $\sqrt{4x} \cdot \sqrt{8x^3}$
14. $12\sqrt{21a^2b^5} \cdot \sqrt{56a^3b^3}$
15. $\sqrt{3} + \sqrt{3}$

16. $\sqrt{5} + 6\sqrt{5}$

17. $2\sqrt{7} + \sqrt{63}$

18. $\sqrt{12} + \sqrt{48}$

19. $\sqrt{72} - \sqrt{50} + 7\sqrt{2}$

20. $(-9 + 5\sqrt{3}) - (4 + 7\sqrt{3})$

21. $(5 - 3\sqrt{7}) + (-7 + 8\sqrt{7})$

[22-30] Rationalize and simplify each expression.

22. $\frac{1}{\sqrt{3}}$

23. $\frac{2}{\sqrt{5}}$

24. $\frac{\sqrt{14}}{\sqrt{7}}$

25. $\frac{\sqrt{20}}{\sqrt{15}}$

26. $\sqrt{\frac{3}{4}}$

27. $\sqrt{\frac{25}{6}}$

28. $\sqrt{\frac{2}{18}}$

29. $\frac{\sqrt{14}}{2\sqrt{5}}$

30. $\frac{\sqrt{15}}{9\sqrt{5}}$