

Name: \_\_\_\_\_

# Radical Handout

NO Calculators

I. Simplify: leave in radical form

- |                                  |                                   |                                 |                                   |
|----------------------------------|-----------------------------------|---------------------------------|-----------------------------------|
| 1. $\sqrt{81}$                   | 2. $\sqrt{0}$                     | 3. $\sqrt{24}$                  | 4. $\sqrt{13^2}$                  |
| 5. $(\sqrt{7})^2$                | 6. $\sqrt{600}$                   | 7. $\sqrt{245}$                 | 8. $\frac{1}{\sqrt{5}}$           |
| 9. $\frac{12}{\sqrt{2}}$         | 10. $\sqrt{\frac{2}{3}}$          | 11. $\sqrt{4} \cdot \sqrt{7}$   | 12. $\sqrt{8} \cdot \sqrt{15}$    |
| 13. $\frac{\sqrt{45}}{\sqrt{5}}$ | 14. $\frac{\sqrt{12}}{\sqrt{24}}$ | 15. $\frac{\sqrt{5}}{\sqrt{3}}$ | 16. $\frac{\sqrt{21}}{\sqrt{18}}$ |
| 17. $\frac{12}{\sqrt{15}}$       | 18. $\sqrt{\frac{80}{25}}$        | 19. $\sqrt{\frac{25}{80}}$      | 20. $3\sqrt{27}$                  |
| 21. $\frac{1}{2}\sqrt{121}$      | 22. $\frac{4\sqrt{125}}{5}$       | 23. $\frac{12}{5\sqrt{6}}$      | 24. $\frac{15\sqrt{2}}{\sqrt{5}}$ |
| 25. $(9\sqrt{2})^2$              | 26. $(\frac{\sqrt{10}}{2})^2$     | 27. $5(2\sqrt{3})^2$            | 28. $\frac{3}{4}(3\sqrt{8})^2$    |

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|-------------------------|--------------------------------|---------------------------|----------------------------------|-----------------------------|
| 1. $\sqrt{36}$          | 2. $\sqrt{81}$                 | 3. $\sqrt{24}$            | 4. $\sqrt{98}$                   | 5. $\sqrt{300}$             |
| 6. $\sqrt{\frac{1}{4}}$ | 7. $\frac{\sqrt{5}}{\sqrt{3}}$ | 8. $\sqrt{\frac{80}{25}}$ | 9. $\frac{2\sqrt{3}}{\sqrt{12}}$ | 10. $\sqrt{\frac{250}{48}}$ |
| 11. $\sqrt{13^2}$       | 12. $(\sqrt{17})^2$            | 13. $(2\sqrt{3})^2$       | 14. $(3\sqrt{8})^2$              | 15. $(9\sqrt{2})^2$         |
| 16. $5\sqrt{18}$        | 17. $4\sqrt{27}$               | 18. $6\sqrt{24}$          | 19. $5\sqrt{8}$                  | 20. $9\sqrt{40}$            |

II. Solve for x: Put in <sup>answers</sup> radical form: Simplify

- |   |  |                                  |
|---|--|----------------------------------|
| 29. $\frac{2}{x} = \frac{x}{8}$           | 30. $\frac{1}{x} = \frac{x}{27}$       | 31. $\frac{x}{7} = \frac{5}{x}$  |
| 32. $\frac{x}{49} = \frac{100}{x}$        | 33. $\frac{x}{4} = \frac{32}{x}$       | 34. $\frac{30}{x} = \frac{x}{6}$ |
| 35. $x^2 = 3^2 + 4^2$                     | 36. $x^2 + 3^2 = 4^2$                  | 37. $5^2 + x^2 = 9^2$            |
| 38. $(4\sqrt{2})^2 + x^2 = (4\sqrt{3})^2$ | 39. $\frac{3x+6}{x+4} = \frac{x+2}{x}$ | 40. $(2x)^2 + 15^2 = (3x)^2$     |

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|-----------------------|---------------------------------|--------------------------------------|
| 21. $3^2 + 4^2 = x^2$ | 22. $x^2 + 4^2 = 5^2$           | 23. $5^2 + x^2 = 13^2$               |
| 24. $x^2 + 3^2 = 4^2$ | 25. $4^2 + 7^2 = x^2$           | 26. $x^2 + 5^2 = 10^2$               |
| 27. $1^2 + x^2 = 3^2$ | 28. $x^2 + 5^2 = (5\sqrt{2})^2$ | 29. $(x)^2 + (7\sqrt{3})^2 = (2x)^2$ |