

# Section 1.5 – Chapter Summary

## Problem Set 1

**Simplify the following expressions.**

- |  |  |   |                                |
|--|--|---|--------------------------------|
| 1. $a^4 \cdot a^7$                               | 2. $e^4 - 2e^4$                                | 3. $\frac{e^7}{e^2}$                      | 4. $(x^4 \cdot x^{5/7})^{1/5}$ |
| 5. $h^{-4}$                                      | 6. $\left(\frac{h^4 s^{-7}}{hs^{-5}}\right)^3$ | 7. $(y^4 \cdot y^{-3} \cdot y^{-8})^{-3}$ | 8. $s^{4/7} s^{9/2}$           |
| 9. $\frac{p^7 q^{-2} r^{-7}}{p^3 q^{-2} r^{-6}}$ | 10. $\sqrt{92}$                                | 11. $3\sqrt{56}$                          | 12. $\sqrt{1000}$              |
| 13. $\frac{7}{\sqrt{324}}$                       | 14. $\frac{3}{2 - \sqrt{7}}$                   | 15. $\frac{-3}{\sqrt{18}}$                | 16. $\frac{2}{2 + \sqrt{7}}$   |

**Replace the fractional exponents with the equivalent “root” expression.**

- |               |               |               |                |
|---------------|---------------|---------------|----------------|
| 17. $u^{4/5}$ | 18. $w^{7/8}$ | 19. $t^{5/3}$ | 20. $y^{15/7}$ |
|---------------|---------------|---------------|----------------|

**Replace the “root” expression with the equivalent fractional exponent.**

- |                     |                        |                     |                     |
|---------------------|------------------------|---------------------|---------------------|
| 21. $\sqrt[4]{y^7}$ | 22. $\sqrt[5]{n^{15}}$ | 22. $\sqrt{j^{12}}$ | 24. $\sqrt[3]{y^7}$ |
|---------------------|------------------------|---------------------|---------------------|

**Simplify the following expressions.**

- |                                 |   |  |   |
|---------------------------------|---|--|---|
| 25. $t^{4/5} t^{6/5}$           | 26. $\frac{o^{7/2}}{o^{5/7}}$                     | 27. $\frac{\sqrt[5]{n^4}}{\sqrt[5]{n}}$              | 28. $\frac{(pt^4)^{8/9}}{(pt^4)^{2/9}}$                 |
| 29. $\sqrt[5]{s^{12}}$          | 30. $\sqrt{p^3 q^8 s} \cdot \sqrt[3]{p^{12} q^9}$ | 31. $\frac{\sqrt[8]{a^{13} b^9}}{\sqrt{b}}$          | 32. $\frac{\sqrt[3]{x^4} \sqrt[7]{x^3}}{\sqrt[4]{x^5}}$ |
| 33. $\sqrt[4]{x^6} \sqrt[3]{x}$ | 34. $\sqrt[7]{a^8 b^{22} c^{16}}$                 | 35. $p^{12/7} p^{6/5} - \frac{3q^{12/7}}{12q^{6/5}}$ | 36. $\frac{\sqrt[7]{h^2}}{\sqrt[10]{h^5}}$              |