

Name: _____

(20 points) Books, notes, and calculators are **not** allowed. *Show all your work and clearly indicate your answers.* Good Luck!

Evaluate the the following. If there is no real number solution, clearly state so.

1. (1 pts) $\sqrt[3]{\frac{8}{27}}$

2. (2 pts) $-49^{-1/2}$

Simplify the following. Use only positive exponents in your answers.

3. (1 pts) $\frac{y^3}{y^{-6}}$

4. (2 pts) $(-3x)^2 \cdot 3x^3$

5. (3 pts) $\left(\frac{a^3b^{-4}}{a^5}\right)^{-2}$

Replace the radical with a fractional exponent. Do not simplify.

6. (1 pts) $\sqrt[3]{m^7}$

Write the following in radical form. Do not simplify.

7. (1 pts) $4x^{3/5}$

Simplify the following expressions where possible. Leave your solution in radical form.

8. (3 pts) $\sqrt[3]{24a^4b^9}$

9. (3 pts) $\frac{\sqrt{25x^5y^4}}{\sqrt{50x^9}}$

Simplify the following expressions where possible. Write your solution with only positive exponents.

10. (1 pts) $a^{2/5} \cdot a^{-1/5}$

11. (2 pts) $(x^{-2/3}y^3)^5$