

Algebra II  
Exponents #3

Name \_\_\_\_\_

Without a calculator, evaluate the following.

1.  $\sqrt[5]{-1}$

2.  $\sqrt[6]{-769}$

3.  $\sqrt[2]{0}$

4.  $\sqrt[5]{-32}$

5.  $\sqrt[4]{256}$

6.  $\sqrt[3]{8}$

7.  $64^{\frac{1}{6}}$

8.  $25^{\frac{3}{2}}$

9.  $(-64)^{\frac{4}{3}}$

10.  $16^{\frac{7}{4}}$

11.  $8^{\frac{2}{3}}$

12.  $(-243)^{\frac{1}{5}}$

Use your calculator to evaluate the following. Round to two decimal places.

13.  $25^{-\frac{1}{6}}$

14.  $20,736^{\frac{4}{5}}$

15.  $86^{-\frac{5}{6}}$

16.  $\sqrt[3]{1695}$

17.  $(\sqrt[4]{187})^3$

18.  $(\sqrt[5]{-8})^8$

Solve the following.

19.  $(x + 10)^5 = 70$

20.  $x^6 + 36 = 100$

21.  $7x^5 = -48$

22. Rewrite 125 as a power of 25

23. Solve the equation  $4^x = 8^{2x+1}$  by rewriting using the best base that they have in common.

24. Rewrite the function  $f(x) = \frac{x^2 + 3x - 5}{x^2 + 2}$  in the form  $q(x) + \frac{r(x)}{x^2 + 2}$ .