Practice Problems for Exponents, Roots, and Logarithms
from www.topmath.info

1 What is the square root of 1,849?

2 What is the cube root of 15,625?

3 What is the cube root of 64,000?

4 What is 0 squared?

5 Suppose ux^-1 = 3. What is u?

6 What is 22 squared?

7 What is 70 squared?

8 What is 75 cubed?

9 What can x be, if x^3 + 64 = 0?

10 A number, u, has 5 added to it to produce a second number. The cube root of the second
     number is -0.6. What is u?

11 A number, q, has 19 added to it to produce a second number. The fifth root of the second number is -0.4. What is q?

12 A number, r, has 11 added to it to produce a second number. The cube root of the second number is 0.9. What is r?

13 A number, p, has 5 added to it to produce a second number. The fifth root of the second number is 0.1. What is p?

14 If $x^2 + x = 30$, what are the two possible values of $x^2 - x$?

15 What is the square root of 625?

1 ANSWER: 2401

2 ANSWER: 8,100

3 ANSWER: 3,375

4 ANSWER: 0

5 ANSWER: $3x^1$. EXPLANATION: The expression x^{-1} means $1/(x^1)$. If we multiply this by x^1, the two cancel each other, and we need only multiply by 3 to equal the number on the right side of the equation.

6 ANSWER: 484

7 ANSWER: 4,900

8 ANSWER: 421,875

9 ANSWER: -4. EXPLANATION: The number whose cube is 64 is 4. Because x^3 must be negative, x must also be negative.

10 ANSWER: -5.216. EXPLANATION: The second number is -0.6 cubed, or -0.216. This is 5 greater than u, so we subtract to get the answer.

11 ANSWER: -19.01024. EXPLANATION: The second number is -0.4 to the fifth power, or -0.01024. This is 19 greater than q, so we subtract to get the answer.

12 ANSWER: -10.271. EXPLANATION: The second number is 0.9 cubed, or 0.729. This is 11 greater than r, so we subtract to get the answer.

13 ANSWER: -4.99999. EXPLANATION: The second number is 0.1 to the fifth power, or 0.00001. This is 5 greater than p, so we subtract to get the answer.

14 ANSWER: 5 and -6. EXPLANATION: You can factor x^2 + x to be x(x+1). These are consecutive integers that multiply to a product of 30. The first two such integers that come to mind are 5 and 6, and of course, -6 and -5 form the other solution.

15 ANSWER: 1764