# Practice Problems for Numbers
## from www.topmath.info

1 What is 3 x 5.2?

2 What number is written in expanded form as 800 + 9 ?

3 Write the number 8,503 in expanded form.

4 What is the Roman numeral equivalent of 319?

5 What is the base 10 equivalent of the base four number 223?

6 (T/F):  16.35 is an integer.

7 (T/F):  136 is an even number.

8 (T/F):  The square root of 2 is an irrational number.

9 (T/F):  The number 81.56566566656666. . .  is irrational.

10 What number equals 67 hundreds?

11  What number equals 3164 one-thousandths?

12  What digit is in the ten thousands place in the number 594,809?

13  Let x be a negative integer.  Let r = (x - 0.8)^2.  Let s = (x^2 - 0.8).  Let t = (x^3 - 0.8).  Write r, s, and t in order from least to greatest.

14  What number is 3.46 to the left of 16 on the number line?

15  What is 2 + 7.9?

1 ANSWER:  15.6

2 ANSWER:  809.  EXPLANATION:  To convert numbers from expanded notation, simply add up the individual numbers shown in the expanded notation.  In this case, the total is 809.

3 ANSWER:  8,000 + 500 + 3.  EXPLANATION:  To convert numbers to expanded notation, write the values of the numbers from left to write, with plus signs in between.  Skip the zeroes.

4 ANSWER:  CCCXIX

5 ANSWER:  43

6 ANSWER:  False.  EXPLANATION:  An integer has no digits to the right of the decimal point.  Since 16.35 has one or more digits to the right of the decimal point, it is not an integer.

7 ANSWER:  True.  EXPLANATION:  A number is even if and only if it is an integer that ends in 0, 2, 4, 6, or 8.  Integers that end in 1, 3, 5, 7, or 9 are odd.  Since 136 ends in 6, it is even.

8 ANSWER:  True.  EXPLANATION:  Only perfect squares have rational square roots.  Since there is no integer that can be multiplied by itself to make 2, the square root of 2 is irrational.

9 ANSWER:  True.  EXPLANATION:  A rational number has one or more digits to the right of the decimal point that repeat forever.  Here, the number of 6's after each 5 keeps growing, so the number is irrational.

10 ANSWER:  6,700.  EXPLANATION:  To solve this, simply multiply 67 by 100.

11 ANSWER:  3.164.  EXPLANATION:  To solve this, simply multiply 3164 by 0.001, which is equivalent to moving the decimal point three places to the left..

12 ANSWER:  9

13 ANSWER:  t, s, r.  EXPLANATION:  Clearly, r and s will both be positive, but t will be negative, so t will be least.  Subtracting 0.8 from the negative integer x before squaring it means the resulting square is larger than it would otherwise have been, so $(x - 0.8)^2$ must be greater than $x^2$, and r must be greater than s.

14 ANSWER:  12.54

15 ANSWER:  9.9