Tutor-USA.com Worksheet **Name:** _____

Number Theory **Date:** _____ **Period:** _____ **Score:** _____

Answer the following:

1) Write down:
   a. Largest 3-digit odd number with a 7 in the tens place
   b. Smallest 4-digit even number with a 6 in the hundreds place

2) Which of these numbers are palindromes?
   a. 24 124
   b. 13 231
   c. 46 446
   d. 7 007

3) Write the first 6 multiples of:
   a. 4
   b. 6
   c. 7
   d. 9

4) a. find the 8^{th} multiple of 5.
   b. Which multiple of 6 is 42?

5) How could you test a number for divisibility by 18?

6) Find all factors of each number:
   a. 16
   b. 30
   c. 42
   d. 72

7) Find the GCF of:
   a. 15 and 20
   b. 21 and 28
   c. 32 and 40

8) Use the given prime factors to find the GCF of each pair of numbers.

a. $441 = 3 \times 3 \times 7 \times 7$ and $1\,134 = 2 \times 3 \times 3 \times 3 \times 3 \times 7$

b. $3\,575 = 5 \times 5 \times 11 \times 13$ and $33\,275 = 5 \times 5 \times 11 \times 11 \times 11$

9) a. Show that $36 \times 16 = 576$.

b. Hence, find $\sqrt{576}$.

10) Use the given prime factors to find the LCM of each pair of numbers.

a. $18 = 2 \times 3 \times 3$ and $42 = 2 \times 3 \times 7$

b. $392 = 2 \times 2 \times 2 \times 7 \times 7$ and $700 = 2 \times 2 \times 5 \times 5 \times 7$

Answer Key

1) a. 979
   b. 1 600
2) b. 13 231
   d. 7 007
3) a. 4, 8, 12, 16, 20, 24
   b. 6, 12, 18, 24, 30, 36
   c. 7, 14, 21, 28, 35, 42
   d. 9, 18, 27, 36, 45, 54
4) a. 40
   b. 7^{th}
5) If it has a factor of 2 and 9.
6) a. $(1, 2, 4, 8, 16)$
   b. $(1, 2, 3, 5, 6, 10, 15, 30)$
   c. $(1, 2, 3, 6, 7, 14, 21, 42)$
   d. $(1, 2, 3, 4, 6, 8, 9, 12, 18, 24, 36, 72)$
7) a. 5
   b. 7
   c. 8
8) a. 63
   b. 275
9) a. $36 \times 16 = 576$
   b. 24
10) a. 126
    b. 9 800

