Name:_____ Date:_____

Math 8 Honours Assignment 1.2 Multiplying Strategies with Prime Numbers:

1. Circle all the prime numbers below. If it's not a prime number, give one of its factors other than 1:

23	29	39	43	49	61
71	93	79	101	109	113
117	119	137	147	157	169

2. Given each set of numbers below, find the greatest common factor (GCF) and lowest common multiple (LCM):

a) $\langle 15, 24 \rangle$ GCF: LCM:	b) $\langle 18, 12 \rangle$ GCF: LCM:	c) $\langle 16, 8 \rangle$ GCF: LCM:
d) $\langle 35, 14 \rangle$ GCF: LCM:	e) $\langle 65, 91 \rangle$ GCF: LCM:	f) $\langle 195, 221 \rangle$ GCF: LCM:

3. Given each set of numbers, break it into smaller factors and then multiply: (No calculators)

a) 56×15	b) 75×28	c) 65×22	d) 55×126
e) 84×25	f) 26×35	g) $13 \times 35 \times 26$	h) $32 \times 15 \times 11$
i) $22 \times 15 \times 7$	j) $35 \times 12 \times 22$	k) $24 \times 35 \times 39$	L) $18 \times 49 \times 33$

4. Multiply the following without a calculator:

a) $\begin{array}{r} 136 \\ \times 3 \\ \hline \end{array}$	b) $\begin{array}{r} 215 \\ \times 7 \\ \hline \end{array}$	c) $\begin{array}{r} 349 \\ \times 5 \\ \hline \end{array}$	d) $\begin{array}{r} 352 \\ \times 8 \\ \hline \end{array}$
e) $\begin{array}{r} 716 \\ \times 9 \\ \hline \end{array}$	f) $\begin{array}{r} 975 \\ \times 4 \\ \hline \end{array}$	g) $\begin{array}{r} 628 \\ \times 11 \\ \hline \end{array}$	h) $\begin{array}{r} 419 \\ \times 17 \\ \hline \end{array}$

5. How many prime numbers are there less than 100?

6. Is "1" a prime number?

7. Multiply the following: $7 \times 3\frac{1}{5} + 3 \times 6\frac{1}{8} + 7 \times 6\frac{4}{5} + 3 \times 3\frac{7}{8}$

8. If the product $1,001,001,001 \times 999 \times 1,000,000,000,001$ is computed, how many 9's are in the product?

9. In the multiplication shown below, each letter represents a different digit. What digit does the letter "C" represent?

$$ABCDE$$
$$\underline{\times E}$$
$$EDADE$$

10. Find the smallest two-digit number that is twice the product of its digits

11. A factorial "n!"is a function that multiplies all positive integers less than or equal to "n". For instance,
$3! = 3 \times 2 \times 1$, $8! = 8 \times 7 \times 6 \times 5 \times 4 \times 3 \times 2 \times 1$. Find the values of following without a calculator:

a) 4!	b) 5!
c)6!	d) 7!
e) 8!	f) 9!
g) 10!	h) 5! $\times 3!$
i)4! $\times 5!$ $\times 3!$	j) $\dfrac{10!}{8!}$

12. Evaluate the following without a calculator:

a) $5! - 4!$	b) $6! - 4!$	c) $7! - 5!$
d) $\dfrac{6!}{3! \times 3!}$	e) $\dfrac{7!}{3! \times 4!}$	f) $\dfrac{8!}{2! \times 6!}$
g) $\dfrac{8!}{4!} \times 3!$	h) Challenge: Solve for "x" $$\frac{8!}{(8-x)! \times x!} = 56$$	

13. Jason places coins in the order of penny, nickel, dime, penny, nickel, dime and so on, so that each row contains one more than the previous row as shown. What is the value of all the coins if there are 20 rows?
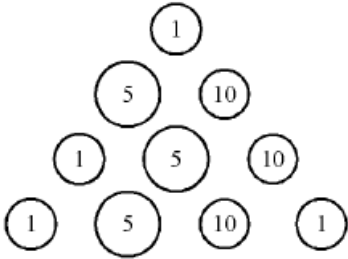
14. Challenge: Given that a, b, c, d, e, f, g, h, and i all represent a different digit from 1 to 9. If $\dfrac{ab}{cde} + \dfrac{fg}{hi} = 7$, then what numbers do each letter represent?