Math 4 Homework # 4

1. Present each number as a product of prime factors:

a). 126 = _____ b). 520 = _____

c). 192 = _____ d). 204 = _____

e). 108 = _____ f). 372 = _____

2. Write the following numbers as products of their prime factors:

a). 1001= _____

b). 2002 = _____

c).24024 = _____
(divisible by 24)

Solve in your notebook grid:

3. Find how many numbers from 1 to 100 are …

a). … multiples of 4; b). … multiples of 6;
c). … multiples of both 4 and 6; d).* … not divisible by neither 4 nor 6.

Present your results as a simplified Venn Diagram. **Do not** write 100 elements into the diagram, but simply indicate **how many** elements are in each area.

4. At a bus stop, there are three bus lines. One of them has buses running every 3 minutes, the other has buses running every 5 minutes, and the third one, every 7 minutes. At noon, the buses for all three lines meet at the stop. When will the same thing happen next time?

5. Present …
a). … numbers 196 and 12 as the products of their prime factors.
b). … the GCM and GCD of these numbers as the products of their prime factors.

6. A person takes a sheet of paper, and then tears it into 4 pieces; then he picks up one of the pieces and tears it into 4, and so on. Do you think he will ever get exactly 200 pieces?

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7. Using the Sieve of Eratosthenes try to …

a). … find all primes between 1-200. [You only need to cross out multiples of numbers up to 15.] Circle them.

b). … find all pairs of prime numbers that differ by 2. Such prime numbers are called twins. Examples: 5 and 7; 11 and 13. Double circle them or circle them in green.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100
101	102	103	104	105	106	107	108	109	110
111	112	113	114	115	116	117	118	119	120
121	122	123	124	125	126	127	128	129	130
131	132	133	134	135	136	137	138	139	140
141	142	143	144	145	146	147	148	149	150
151	152	153	154	155	156	157	158	159	160
161	162	163	164	165	166	167	168	169	170
171	172	173	174	175	176	177	178	179	180
181	182	183	184	185	186	187	188	189	190
191	192	193	194	195	196	197	198	199	200