Key

NAME   DATE   PERIOD

/20

Unit 7, Lesson 17: Common Multiples

1. a. A green light blinks every 4 seconds and a yellow light blinks every 5 seconds. When will both lights blink at the same time?   G 4   8   12   16   20   20 seconds
   Y 5   10   15   20

   b. A red light blinks every 12 seconds and a blue light blinks every 9 seconds. When will both lights blink at the same time?   R 12   24   36   /3
   B 9   18   27   36

   c. Explain how to determine when 2 lights blink together.
   List multiples and find the common (same)

2. a. List all multiples of 10 up to 100.   10   20   30   40   50   60   70   80   90   100

   b. List all multiples of 15 up to 100.   15   30   45   60   75   90   /3

   c. What is the least common multiple of 10 and 15?   LCM = 30

3. Cups are sold in packages of 8. Napkins are sold in packages of 12.

   a. What is the fewest number of packages of cups and the fewest number of packages of napkins that can be purchased so there will be the same number of cups as napkins?   /2

   b. How many sets of plates and napkins will there be?

   Cups   8   16   24   32   3 cups o | 3 packs of cups = 24
   Napkins 12   24   36 | 2 packs of napkins = 24

   24 sets — not really sets   Total

4. Diego has 48 chocolate chip cookies, 64 vanilla cookies, and 100 raisin cookies for a bake sale. He wants to make bags that have all three cookie flavors and the same number of each flavor per bag.

   a. How many bags can he make without having any cookies left over?

   4 bags
   | 12 | 16 | 25 |
   | CC | V | R |

48 bags	each
1	48
2	24
3	16
4	12
12	4
16	3
24	2
48	1
8	6

64 bags	each
1	64
2	32
4	16
8	8
16	4
32	2
64	1

100 bags	each
1	100
2	50
4	25
5	20
20	5
25	4
50	2
100	1

   or

   2 bags
   | 24 | 32 | 50 |
   | CC | V | R |

   /2

   b. Find the another solution to this problem.

   (from Unit 7, Lesson 16)

NAME _____ DATE 30 PERIOD _____

Unit 7, Lesson 18: Using Common Multiples and Common Factors

see above ↑

1. Mai, Clare, and Noah are making signs to advertise the school dance. It takes Mai 6 minutes to complete a sign, it takes Clare 8 minutes to complete a sign, and it takes Noah 5 minutes to complete a sign. They keep working at the same rate for a half hour. = 30 min

   a. Will Mai and Clare complete a sign at the same time? Explain your reasoning. *yes @ 24 minutes*

   b. Will Mai and Noah complete a sign at the same time? Explain your reasoning. *yes @ 30 minutes*

   c. Will Clare and Noah complete a sign at the same time? Explain your reasoning *No, they have no common multiples*

   d. Will all three students complete a sign at the same time? Explain your reasoning *No there is not a common multiple for all 3 kids.*

   4/4

2. a. Find the product of 12 and 8.

   $$12 \times 8 = 96$$

   b. Find the greatest common factor of 12 and 8.

   $$\begin{array}{c|c} & 8 \\ 1 & 8 \\ 2 & 4 \end{array} \qquad \begin{array}{c|c} & 12 \\ 1 & 12 \\ 2 & 6 \\ 3 & 4 \end{array} \qquad 4 \text{ is GCF}$$

   c. Find the least common multiple of 12 and 8.

   8   16   24
   12   24   32   24 is LCM

   6/6

   d. Find the product of the greatest common factor and the least common multiple of 12 and 8.
   $$24 \times 4 = 96$$

   e. What do you notice about the answers to question 1 and question 4? *They are the same*

   f. Choose 2 other numbers and repeat steps 1-5. Do you get the same results?

   $$\begin{array}{c|c} & 3 \\ 1 & 3 \end{array} \qquad \begin{array}{c|c} & 12 \\ 1 & 12 \\ 2 & 6 \\ 3 & 4 \end{array} \qquad \begin{array}{r} 12 \\ \times 3 \\ \hline 36 \end{array} \text{product} \qquad 3\ 6\ 9\ 12 \\ 12 \\ LCM=12$$

   GCF = 3

   $$\begin{array}{r} 12 \ LCM \\ \times\ 3\ GCF \\ \hline 36 \end{array} \text{yes!}$$