Name _____ Date _____

1. Record the factors of the given numbers as multiplication sentences and as a list in order from least to greatest. Classify each as prime (P) or composite (C). The first problem is done for you.

| | Multiplication Sentences | Factors | P or C |
|---|---|---|---|
| a. | 8<br>$1 \times 4 = 8$ $2 \times 4 = 8$ | The factors of 8 are:<br>1, 2, 4, 8 | C |
| b. | 10 | The factors of 10 are: | |
| c. | 11 | The factors of 11 are: | |
| d. | 14 | The factors of 14 are: | |
| e. | 17 | The factors of 17 are: | |
| f. | 20 | The factors of 20 are: | |
| g. | 22 | The factors of 22 are: | |
| h. | 23 | The factors of 23 are: | |
| i. | 25 | The factors of 25 are: | |
| j. | 26 | The factors of 26 are: | |
| k. | 27 | The factors of 27 are: | |
| l. | 28 | The factors of 28 are: | |

2. Find all factors for the following numbers, and classify each number as prime or composite. Explain your classification of each as prime or composite.

| Factor Pairs for 19 | |
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| Factor Pairs for 21 | |
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| Factor Pairs for 24 | |
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3. Bryan says that only even numbers are composite.
   a. List all of the odd numbers less than 20 in numerical order.

   b. Use your list to show that Bryan's claim is false.

4. Julie has 27 grapes to divide evenly among 3 friends. She thinks there will be no leftovers. Use what you know about factor pairs to explain whether or not Julie is correct.

# Answer Key

1. a. Answer provided
   b. $1 \times 10 = 10$, $2 \times 5 = 10$; 1,2, 5, 10; C
   c. $1 \times 11 = 11$; 1, 11; P
   d. $1 \times 14 = 14$, $2 \times 7 = 14$; 1, 2, 7, 14; C
   e. $1 \times 17 = 17$; 1, 17; P
   f. $1 \times 20 = 20$, $2 \times 10 = 20$, $4 \times 5 = 20$; 1, 2, 4, 5, 10, 20; C
   g. $1 \times 22 = 22$, $2 \times 11 = 22$; 1, 2, 11, 22; C
   h. $1 \times 23 = 23$; 1, 23; P
   i. $1 \times 25 = 25$, $5 \times 5 = 25$; 1, 5, 25; C
   j. $1 \times 26 = 26$; $2 \times 13 = 26$; 1, 2, 13, 26; C
   k. $1 \times 27 = 27$, $3 \times 9 = 27$; 1, 3, 9, 27; C
   l. $1 \times 28 = 28$, $2 \times 14 = 28$, $4 \times 7 = 28$; 1, 2, 4, 7, 14, 28; C
2. For 19: (1, 19); prime; only 2 factors
   For 21: (1, 21); (3, 7); composite; more than 2 factors
   For 24: (1, 24); (2, 12); (3, 8); (4, 6); composite; more than 2 factors
3. a. 1, 3, 5, 7, 9, 11, 13, 15, 17, 19
   b. 9 and 15 are odd and composite
4. Correct; 3 is a factor of 27