

Name _____

1. Margie has 64 rectangular steppingstones to arrange in an array in her backyard.

A. How many arrays can Margie make with the 64 steppingstones? List all the possible arrays. **2 points**

7 arrays; $1 \times 64, 2 \times 32, 4 \times 16, 8 \times 8, 16 \times 4, 32 \times 2, 64 \times 1$

B. How many factors are there for 64? Write them. What do you notice about the number of factors of 64 and the number of arrays Margie can make with the steppingstones? **3 points**

7 factors; 1, 2, 4, 8, 16, 32, 64; Sample answer: The number of factors is the same as the number of arrays.

C. Write all the factor pairs for 64. Is 64 prime or composite? Explain. **3 points**

1 and 64, 2 and 32, 4 and 16, 8 and 8; Composite; Sample answer: 64 is composite because it has more than one factor pair.

2. Determine whether the numbers in each list are **factors** or **multiples** of 12. **1 point**

	Factors	Multiples
1, 12	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2, 6	<input checked="" type="checkbox"/>	<input type="checkbox"/>
12, 24, 36	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3, 4	<input checked="" type="checkbox"/>	<input type="checkbox"/>

3. Which statement is true? **1 point**

- (A) The only factors of 4 are 4 and 1; therefore, 4 is composite.
- (B) The only factors of 7 are 7 and 1; therefore, 7 is prime.
- (C) The only factors of 16 are 16 and 1; therefore, 16 is prime.
- (D) The only factors of 31 are 31 and 1; therefore, 31 is composite.

4. Determine if each number is prime or composite. Then write all the factors for each number. **2 points**
29, 51

29: prime; 1, 29
51: composite; 1, 3, 17, 51

5. Select all equations that have a dividend as a multiple of 2 and a quotient as a factor of 24. **1 point**

- $42 \div 7 = 6$
- $40 \div 10 = 4$
- $32 \div 4 = 8$
- $24 \div 4 = 6$
- $10 \div 5 = 2$

6. Write 3 multiples and 3 factors for 12. **2 points**

Sample answer:
Multiples: 24, 36, 48
Factors: 1, 2, 3

7. Write two multiples of 7 that have a factor of 5. Use equations to explain. **2 points**

Sample answer:
35 and 70; $7 \times 5 = 35$
and $35 \times 2 = 70$

8. Select all the true statements. **1 point**

- 51 is a composite number.
 52 is a multiple of 13.
 5 is a factor of 53.
 54 has more than two factors.
 55 is a prime number.
 One of the factors of 56 is an odd number.

9. Kurt says factors and multiples are related. Use the equation $8 \times 5 = 40$ to describe the relationship between factors and multiples. **1 point**

Sample answer: 8 and 5 are factors of 40. 40 is a multiple of 8 and a multiple of 5.

10. Which lists all the factors of 36 that are also composite numbers? **1 point**

- (A) 1, 36
(B) 1, 2, 4, 6, 36
(C) 4, 6, 9, 12, 18, 36
(D) 1, 2, 3, 4, 6, 9, 12, 18, 36

11. Pete's Pastries sells cupcakes in packs of 4. A caterer needs between 42 and 50 cupcakes for dessert. Name two possible numbers between 42 and 50 that are multiples of 4. Explain. **2 points**

44 and 48; Sample answer: Multiples of 4 can be divided by 4 without a remainder.
 $44 \div 4 = 11$ and
 $48 \div 4 = 12$

12. Write the factors of 42 that are also prime numbers. **1 point**

2, 3, 7

13. Jared says all even numbers less than 20 are composite. Find an even number less than 20 that is **NOT** composite. Explain why the number is not composite. **2 points**

Sample answer:
2 because it only has 2 factors: 1 and 2.