## **MASC 1024 Test 3, Practice Test**

1. Classify as an example of the commutative property, the associative property, or both.

$$2 + (3+5) = (2+3) + 5$$

Select the correct answer.

- **O** commutative
- **O** both
- O associative
- 2. Consider the set  $A = \{1, 4, 7, 9\}$  with an operation \* defined by the table.

a\*b means find the entry in row a and column b; for example, 7\*9=9 (the entry in row 7 and column 9). Find 9\*9.

*	1	4	7	9
1	9	7	1	4
4	7	9	4	1
7	1	4	7	9
9	4	1	9	7

- **O** 1
- **O** 4
- **O** 7
- **O** 9

3. Consider the set  $A = \{1, 4, 7, 9\}$  with an operation \* defined by the table.

a\*b means find the entry in row a and column b; for example, 7\*9=9 (the entry in row 7 and column 9). Find 1\*7.

*	1	4	7	9
1	9	7	1	4
4	7	9	4	1
7	1	4	7	9
9	4	1	9	7

Select the correct answer.

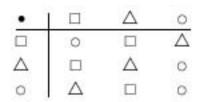
- **O** 7
- **O** 1
- **O** 9
- **O** 4

Consider the set  $\mathbb{N}$  of natural numbers and an operation  $\leftarrow$  which means select the first of the two. That is,  $4 \leftarrow 3 = 4$ ;  $3 \leftarrow 4 = 3$ ;  $5 \leftarrow 7 = 5$ ;  $6 \leftarrow 6 = 6$  Is the set  $\mathbb{N}$  closed for the operation of  $\leftarrow$ ?

- O no
- O yes

**5.** Consider the operation • defined by the table.

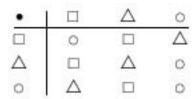
Find □ • ○



Select the correct answer.

- O -
- **O** •
- **6.** Consider the operation defined by the table.

Find □ • ○



- **O** •
- **O** -

Let  $S = \{1, 2, 3, ..., 99, 100\}$ . Define an operation  $\otimes$  as  $a \otimes b = 2a + b$ . Check the commutative and associative properties.

Select the correct answer.

- **O** neither
- associative but not commutative
- commutative but not associative
- associative and commutative
- **8.** What is a prime number?

Select the correct answer.

- The natural number that has exactly two divisors.
- The natural number that has more than two divisors.
- **9.** Is the number 1,997 prime?

- Prime
- O Not prime

## **MASC 1024 Test 3, Practice Test**

**10.** Is the statement 9|47 true or false?

Select the correct answer.

- **O** False
- O True
- 11. Is the statement 5|47 true or false?

Select the correct answer.

- **S** False
- **O** True
- **12.** Write the prime factorization for the number 144.

Select the correct answer.

- $2^2 \cdot 3 \cdot 5^2$
- $2^4 \cdot 3^2$
- $\bigcirc 2^3 \cdot 3$
- 13. Find the g.c.f. and l.c.m. of the sets of numbers  $\{12, 54, 171\}$ .

- **3**; 2,052
- 1; 252
- 12; 360

**14.** Two movie theaters, UAI and UAII, start their movies at 7:00 P.M. The movie at UAI takes 60 minutes and the movie at UAII takes 90 minutes. If the shows run continuously, when will they again start at the same time?

Select the correct answer.

- 12:00 P.M.
- 10:00 P.M.
- 2:30 P.M.
- 15. Find a rational number and an irrational number between the given pair of numbers.

2 and 3

- **O** 2.5 and  $\frac{2}{3}$

- **O** 2 + i and  $\frac{2}{3}$

## **ANSWER KEY**

## **MASC 1024 Test 3, Practice Test**

- 1. associative
- **2.** 7
- **3.** 1
- **4.** yes
- **5.**  $\triangle$
- **6.** △
- 7. neither
- **8.** The natural number that has exactly two divisors.
- **9.** Prime
- 10. False
- 11. False
- 12.  $2^4 \cdot 3^2$
- **13.** 3; 2,052
- **14.** 10:00 P.M.
- **15.** 2.5 and  $\frac{2 \pi}{3}$