Name _____ raw scaled percent

# Math 7 Trimester 1 Exam 1P PRACTICE (176 Points)

*Primes & prime factorization*

■ **A. In the table below, write the first eleven prime numbers. (11 points)**

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

■ **B. Factor the following into primes. Write answers using exponents. If the number is prime, then say so. (6 points each)**

[1] 12

[2] 24

[3] 36

[4] 90

[5] 1216

## ■ C. Answer the following. (8 points each)

[1] The prime factorizations of 594,473 and 23,823 are:

$$594\,473 = 11^2 \cdot 17^3$$

$$23823 = 7^3 \cdot 19^2.$$

If **6 693 357 726 = 594 473 × 23823**, what is the prime factorization of **6 693 357 726**?

[2] The prime factorization of 310 is **310 = 2 · 5 · 31**. List **all** the divisors of **310**.

[3] The prime factorization of 154 is **154 = 2 · 7 · 11**. List **all** the divisors of **154**.

[4] List **all** the divisors of **385**.

■ **D. Answer the following. Use any method you wish. (8 points each)**

[1] GCD[6, 15]

[2] GCD[17, 19]

[3] GCD[5, 55]

[4] GCD[12, 36]

[5] GCD[110, 182]

[6] GCD[144, 216]

[6] GCD[240, 216, 28]

[7] GCD[180, 108, 168]

*Careful, the next few ask for the LCM*

[8] LCM[2, 3, 7]

[9] LCM[72, 36, 40]

■ **E. Answer the following. Use any method you wish. You may leave each answer written as a product of prime numbers. You do not have to actually carry out the multiplication. (5 points each)**

[1] $404291250000 = 2^4 \cdot 3^5 \cdot 5^7 \cdot 11^3$

$5095754296875 = 3^4 \cdot 5^8 \cdot 11^5$

LCM[404291250000, 5095754296875] =

[2] $404291250000 = 2^4 \cdot 3^5 \cdot 5^7 \cdot 11^3$

$5095754296875 = 3^4 \cdot 5^8 \cdot 11^5$

GCD[404291250000, 5095754296875] =

■ **F. Check √ the box [ T ] if the statement is True, the box [ F ] is the statement is False. (2 points each)**

[1] [ T ] [ F ] If a number is a multiple of 14, then it is a multiple of 7.

[2] [ T ] [ F ] If 22 is a divisor of 2890888, then 11 is a prime factor of 2890888.

[3] [ T ] [ F ] 1 is a divisor of every number.

[4] [ T ] [ F ] 1 is a prime number.

[5] [ T ] [ F ] Every whole number greater than 2 can be written as the product of prime numbers.

[6] [ T ] [ F ] If 229 and 349 are prime numbers and $79921 = 229 \cdot 349$, then 79921 is a prime number.

[7] [ T ] [ F ] If four numbers are prime, then the greatest common divisor of the four numbers is 1.

[8] [ T ] [ F ] Every multiple of 34 is has at least one 17 in its prime factorization.

■ **G. Answer the following. (5 points)**

[1] INSERT CARTOON

## Math 7 Trimester 1 Exam 1P PRACTICE (176 Points)

*Answers*

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■ **A. In the table below, write the first eleven prime numbers. (11 points)**

2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31

■ **B. Factor the following into primes. Write answers using exponents. If the number is prime, then say so. (6 points each)**

[1] $2^2 \cdot 3$ [2] $2^3 \cdot 3$ [3] $2^2 \cdot 3^2$ [4] $2 \cdot 3^2 \cdot 5$ [5] $2^6 \cdot 19$

■ **C. Answer the following. (8 points each)**

[1] $7^3\ 11^2\ 17^3\ 19^2$ [2] {1, 2, 5, 10, 31, 62, 155, 310} [3] {1, 2, 7, 11, 14, 22, 77, 154}

[4] {1, 5, 7, 11, 35, 55, 77, 385}

■ **D. Answer the following. Use <u>any</u> method you wish. (8 points each)**

[1] 3 [2] 1 [3] 5 [4] 12 [5] 2 [6] 72

[6] 4 [7] 12 [8] 42 [9] 360

■ **E. Answer the following. Use any method you wish. You may leave each answer written as a product of prime numbers. You do not have to actually carry out the multiplication. (5 points each)**

[1] $2^4\ 3^5\ 5^8\ 11^5$ [2] $3^4\ 5^7\ 11^3$

■ **F. Check √ the box [ T ] if the statement is True, the box [ F ] is the statement is False. (2 points each)**

[1] [ T ] [2] [ T ] [3] [ T ] [4] [ F ] [5] [ T ] [6] [ F ]

[7] [ T ] [8] [ T ]