Focus- ea 1b Study Guide

Name: Key

Period: ____

Prime Factorization (FA1b)

Show a factor tree and write the prime factorization for each.

Example: 56

56 → 7, 8 → 7, 4 → 2, 2 → 2, 2

$2^3 \cdot 7$

1.) 175

5, 35 → 7, 5

$\boxed{5^2 \cdot 7}$

2.) 156

2, 78 → 2, 39 → 3, 13

$\boxed{2^2 \cdot 3 \cdot 13}$

3.) 225

15, 15 → 3, 5, 3, 5

$\boxed{3^2 \cdot 5^2}$

4.) 184

2, 92 → 2, 46 → 2, 23

$\boxed{2^3 \cdot 23}$

Greatest Common Factor (FA1b)

Greatest Common Factor - the largest value that a set of numbers are all divisible by.

5.) List the factors of each number and identify the GCF.

36 - 1, 2, 3, 4, 6, 9, 12, 18, 36

40 - 1, 2, 4, 5, 8, 10, 20, 40

GCF = 4

6.) Use prime factorization to find the GCF.

66

6, 11 → 3, 2

88

8, 11 → 4, 2 → 2, 2

$2 \cdot 3 \cdot 11$

$2 \cdot 2 \cdot 2 \cdot 11$

3 | 11 | 2 2 2

GCF = 22

7.) Find GCF of 18, 24, 36 using any method.

18

2, 9 → 3, 3

24

2, 12 → 3, 4 → 2, 2

36

6, 6 → 3, 2, 3, 2

$2 \cdot 3 \cdot 3$

$2 \cdot 2 \cdot 2 \cdot 3$

$2 \cdot 2 \cdot 3 \cdot 3$

3 | 2 3 | 2 2 | 2 3

GCF: $2 \cdot 3 = 6$

Least Common Multiple (FA1b)

Least Common Multiple- smallest multiple that is shared by two or more numbers.

8.) List multiples of 8 and 6, then find the LCM.

6: 6, 12, 18, 24, 30, 36

8: 8, 16, 24, 32, 40

LCM: = 24

9.) Use prime factorization to find the LCM of 10 and 12.

10 → 2, 5

12 → 2, 6 → 3, 2

10: 5, 2 | 12: 2, 3

LCM = 5·2·2·3 = 60

10.) Find the LCM of 5, 8, 12 using any method.

5

8 → 2, 4 → 2, 2

12 → 2, 6 → 3, 2

5 | 2 2 2 | 2 2 3

5

2·2·2

2·2·3

LCM = 5·2·2·2·2·2·3 = 480

Distributive Property (FA1b)

Use the distributive property to evaluate each expression.

Examples: 9(7 + 8)
9(7) + 9(8)
63 + 72
135

5(2y - 4)
5(2y) - 5(4)
10y - 20

11.) 5(6 + 8)
30+40
70

12.) (3x + 7)10
30x + 70

*can't add together because of variable

Factor the common factor & rewrite using Distributive Property.

Example: 45 + 60
15(3) + 15(4)
15(3+4)

13.) 42 + 60 + 48
6(7+10+8)

14.) 24 + 84
12(2+7)