GCD and LCM **Worksheet 0**

Name: **Date:**

1. Find the GCD(315,825) and LCM(315,825) using prime factorization.

$825 = 3 \cdot 5^2 \cdot 11^1 = 3 \cdot 5^2 \cdot 7^0 \cdot 11^1$

$315 = 3^2 \cdot 5^1 \cdot 7^1 = 3^2 \cdot 5^1 \cdot 7^1 \cdot 11^0$

$GCD(825,315) = 3^{\min(1,2)} \cdot 5^{\min(2,1)} \cdot 7^{\min(0,1)} \cdot 11^{\min(1,0)}$

$= 3^1 \cdot 5^1 \cdot 7^0 \cdot 11^0 = 15$

$LCM(825,315) = 3^{\max(1,2)} \cdot 5^{\max(2,1)} \cdot 7^{\max(0,1)} \cdot 11^{\max(1,0)}$

$= 3^2 \cdot 5^2 \cdot 7^1 \cdot 11^1 = 17325$

$LCM(825,315) \cdot GCD(825,315) = (17325)(15) = 259875$

$(825)(315) = 259875$