Name _____ Date _____

GCF and LCM Word Problems

Decide whether each problem needs the GCF or the LCM, then solve it.

1. A club has 36 girls and 81 boys. They split into teams with the same mix of girls and boys and nobody left out. What is the greatest number of teams?

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2. Hot dogs come in packs of 5 and buns in packs of 6. What is the smallest number of hot dogs you can buy so that you have exactly as many buns?

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3. A teacher has 60 pencils and 72 erasers. She wants to make identical supply kits with nothing left over. What is the greatest number of kits she can make?

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4. One light blinks every 9 seconds and another every 11 seconds. They blink together now. In how many seconds will they next blink together?

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5. A rectangular floor is 24 feet by 84 feet. What is the side length of the largest square tile, in whole feet, that covers it exactly with no cutting?

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6. Cups come in stacks of 3 and plates in stacks of 7. What is the smallest number of cups you can buy so that you have exactly as many plates?

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7. One bus leaves the station every 6 minutes and another every 8 minutes. Both leave at 8:00. After how many minutes do they next leave at the same time?

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8. A florist has 20 roses and 90 tulips. She wants identical bouquets that use every flower. What is the greatest number of bouquets she can make?

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Answer Key: GCF and LCM Word Problems

Each answer shows the prime factorizations used to find it.

1. **9 (GCF)** Equal groups with nothing left over, and the most groups: find the GCF. $36 = 2^2 \times 3^2$; $81 = 3^4$. Shared primes, lowest powers: 3^2, so the GCF is 9. Each team gets 4 girls and 9 boys.
2. **30 (LCM)** The smallest amount both pack sizes can make exactly: find the LCM. 5 is prime; $6 = 2 \times 3$. Every prime, highest power: $2 \times 3 \times 5$, so the LCM is 30. That's 6 packs of hot dogs and 5 packs of buns.
3. **12 (GCF)** Equal groups with nothing left over, and the most groups: find the GCF. $60 = 2^2 \times 3 \times 5$; $72 = 2^3 \times 3^2$. Shared primes, lowest powers: $2^2 \times 3$, so the GCF is 12. Each kit gets 5 pencils and 6 erasers.
4. **99 (LCM)** When two repeating cycles first line up again: find the LCM. $9 = 3^2$; 11 is prime. Every prime, highest power: $3^2 \times 11$, so the LCM is 99.
5. **12 (GCF)** The biggest equal piece that fits both lengths exactly: find the GCF. $24 = 2^3 \times 3$; $84 = 2^2 \times 3 \times 7$. Shared primes, lowest powers: $2^2 \times 3$, so the GCF is 12. That's 2 tiles one way and 7 the other.
6. **21 (LCM)** The smallest amount both stack sizes can make exactly: find the LCM. 3 is prime; 7 is prime. Every prime, highest power: 3×7, so the LCM is 21. That's 7 stacks of cups and 3 stacks of plates.
7. **24 (LCM)** When two repeating cycles first line up again: find the LCM. $6 = 2 \times 3$; $8 = 2^3$. Every prime, highest power: $2^3 \times 3$, so the LCM is 24.
8. **10 (GCF)** Equal groups with nothing left over, and the most groups: find the GCF. $20 = 2^2 \times 5$; $90 = 2 \times 3^2 \times 5$. Shared primes, lowest powers: 2×5, so the GCF is 10. Each bouquet gets 2 roses and 9 tulips.