Math 6 Unit 1 quiz 2: Every number has exactly one prime factorization, Greatest common factor by listing, Least common multiple by listing

Name _____ Date _____ Period _____

8 questions, 22 points

1. Find the greatest common factor by listing factors. (3 points)

(a) 27 and 63 (b) 40 and 88 (c) 34 and 51

2. Find the least common multiple. (3 points)

(a) 8 and 14 (b) 9 and 15 (c) 11 and 44

3. $m = 2^3 \cdot 5^2$. Using the prime factorization, list every factor of m that is a multiple of 10. (2 points)

4. Mateo says he found two whole numbers, both greater than 1, that multiply to $3^4 = 81$, and one of them is even. Is that possible? Explain using prime factorizations. (2 points)

5. Without multiplying the numbers out, write $6 \cdot 15 \cdot 20$ as a prime factorization in tidy form. Then decide whether the product is a perfect square, and if it is, of which whole number. (3 points)

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6. A robotics club has 8 motors, 16 wheels and 36 wires. It packs all of them into identical building sets with nothing left over. What is the largest number of sets it can pack, and what goes in each set? (3 points)

7. Leah has two coils of craft wire, one 48 m long and one 80 m long. She cuts all of it into pieces of the same length, a whole number of meters, with none wasted. Her class needs at least 20 pieces. What is the longest she can make the pieces, and how many pieces will she get? (3 points)

8. In a drumming class, Zoe hits a drum every 3 beats and the teacher rings a bell every 11 beats. They sound together on the first count. How many beats later do they next sound together, and how many times has Zoe hit the drum by then, not counting the first count? (3 points)

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