

Long Division with Remainders: Interpreting Leftovers

Name: _____ Date: _____

Directions: Read each problem carefully. Show your long division work, and decide what to do with the remainder to answer the question.

Question 1: The School Field Trip

A school is planning a field trip for 142 students and teachers. Each school bus can safely hold 45 people. What is the minimum number of buses the school needs to charter so that everyone has a seat?

Question 2: Designing Friendship Bracelets

Maya is making friendship bracelets to sell at a local craft fair. She has 235 decorative beads. Each bracelet requires exactly 8 beads. How many complete friendship bracelets can Maya make for the craft fair?

Question 3: Leftover Pizza Slices

A summer camp orders pizzas for lunch. After all the campers finish eating, there are 53 individual slices of pizza left over. The counselors place the remaining slices into small storage boxes. Each box fits exactly 6 slices of pizza. How many slices of pizza will be left over and placed into the final, incomplete box?

Question 4: Packaging Apple Crates

An orchard worker harvests 418 apples from the trees. He packs them into wooden shipping crates, placing exactly 24 apples into each crate. How many full crates can he completely pack, and how many extra apples will be left over?

Question 5: Funding the Science Lab

A local charity raises \$1,500 to buy new microscope kits for a middle school science lab. Each high-quality microscope kit costs exactly \$125. How many microscope kits can the school purchase with the charity money?

Question 6: Shipping Ceramic Mugs

An online pottery shop needs to ship 95 fragile ceramic mugs to a customer. The shop uses specialized shipping boxes that can cushion up to 12 mugs each. How many shipping boxes will the shop need to safely package and ship all 95 mugs?



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Teacher Answer Key & Explanations

1. **4 buses**

- *The Math:* $142 \div 45 = 3$ remainder 7.
- *Interpretation:* **Round up.** 3 buses leave 7 people behind. An extra 4th bus is required to hold the leftover people.

2. **29 bracelets**

- *The Math:* $235 \div 8 = 29$ remainder 3.
- *Interpretation:* **Drop the remainder.** Maya cannot sell a partial bracelet, so she can only make 29 complete ones.

3. **5 slices**

- *The Math:* $53 \div 6 = 8$ remainder 5.
- *Interpretation:* **Use the remainder.** The question specifically asks for the number of leftover pieces, which is the remainder itself.

4. **17 full crates and 10 leftover apples**

- *The Math:* $418 \div 24 = 17$ remainder 10.
- *Interpretation:* **Report both parts.** The quotient (17) represents the completed crates, and the remainder (10) represents the extra apples.

5. **12 kits**

- *The Math:* $1500 \div 125 = 12$ remainder 0.
- *Interpretation:* **Exact division.** The money covers exactly 12 kits with no remaining cash left over.

6. **8 boxes**

- *The Math:* $95 \div 12 = 7$ remainder 11.
- *Interpretation:* **Round up.** 7 boxes hold 84 mugs. An 8th box is necessary to securely hold the remaining 11 mugs.

