Stop or Repeat?: Worked Answers

Each problem solved the way the lesson does it.

Name: _____ Date: _____

1. Will 5 eighths stop or repeat?
   - $8 = 2 \times 2 \times 2$. Only 2s.

   Answer: Stops (0.625)

2. Will 2 ninths stop or repeat?
   - $9 = 3 \times 3$. It has a 3.

   Answer: Repeats ($0.\overline{2}$)

3. Will 6 fifteenths stop or repeat?
   - Simplest form first: 6 fifteenths = 2 fifths.
   - 5 is only a 5.

   Answer: Stops (0.4)

4. Will 7 thirtieths stop or repeat?
   - $30 = 2 \times 3 \times 5$. It has a 3.

   Answer: Repeats ($0.2\overline{3}$)

5. Write 1 and 1 third as a decimal.
   - Keep the 1.
   - 1 third = $0.\overline{3}$.

   Answer: $1.\overline{3}$ (1.333...)

6. Write –2 and 1 fourth as a decimal.
   - Sign: negative. Keep the 2.
   - 1 fourth = 0.25.

   Answer: –2.25

7 Write 3 and 5 sixths as a decimal.

- Keep the 3.
- 50 ÷ 6 is 8, remainder 2. 20 ÷ 6 is 3, remainder 2, and it repeats.

Answer: $3.8\overline{3}$ (3.8333...)

8 Is $0.4\overline{5}$, the decimal 0.4545... with the 45 repeating, a rational number? Why?

- It repeats, and every decimal that stops or repeats is a rational number.

Answer: Yes