Decimals That Repeat: Worked Answers

Each problem solved the way the lesson does it.

Name: _____ Date: _____

1. Write 2 thirds as a decimal.
   - 20 ÷ 3 is 6, remainder 2.
   - Remainder 2 is back, so the 6 repeats.

   Answer: $0.\overline{6}$ (the 6 repeats: 0.666...)

2. Write 1 ninth as a decimal.
   - 10 ÷ 9 is 1, remainder 1, and it repeats.

   Answer: $0.\overline{1}$ (the 1 repeats: 0.111...)

3. Write 7 elevenths as a decimal.
   - 70 ÷ 11 is 6, remainder 4.
   - 40 ÷ 11 is 3, remainder 7.
   - Remainder 7 is back, so 63 repeats.

   Answer: $0.\overline{63}$ (0.6363...)

4. Write 1 sixth as a decimal.
   - 10 ÷ 6 is 1, remainder 4.
   - 40 ÷ 6 is 6, remainder 4, and it repeats.

   Answer: $0.1\overline{6}$ (only the 6 repeats: 0.1666...)

5. Write –5 ninths as a decimal.
   - Sign: negative.
   - 50 ÷ 9 is 5, remainder 5, and it repeats.

   Answer: $-0.\overline{5}$ (–0.555...)

6 Write 2 elevenths as a decimal.

- 20 ÷ 11 is 1, remainder 9.
- 90 ÷ 11 is 8, remainder 2.
- Remainder 2 is back, so 18 repeats.

Answer: $0.\overline{18}$ (0.1818...)

7 Write 5 twelfths as a decimal.

- 50 ÷ 12 is 4, remainder 2.
- 20 ÷ 12 is 1, remainder 8.
- 80 ÷ 12 is 6, remainder 8, and it repeats.

Answer: $0.41\overline{6}$ (only the 6 repeats: 0.41666...)

8 Write 4 thirds as a decimal.

- 4 ÷ 3 is 1, remainder 1.
- 10 ÷ 3 is 3, remainder 1, and it repeats.

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