

## Five-Step Rule and Exceptions Lesson 2 Single-Digit Repeating Decimal Number Activity Answer Key

Read the following fractions and their equivalent repeating decimal using the braille document "L2-Five-Step-Activity.brf." [There is a braille answer document "L2-Five-Step-Activity-Answers.brf" that can be used to independently check answers.]

1.  $\frac{1}{3} = .\overline{3}$

Answer 1: One-third equals point three with the 3 repeating.

$$2. \quad \frac{2}{3} = 0.\overline{6}$$

Figure 1 consists of four 3x3 grids, labeled (a) through (d), each containing black dots. Grid (a) has 6 dots at positions (1,1), (1,2), (1,3), (2,1), (2,2), and (2,3). Grid (b) has 10 dots at positions (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), and (3,4). Grid (c) has 8 dots at positions (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), and (3,2). Grid (d) has 12 dots at positions (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), (3,4), (3,5), and (3,6).

Answer 2: Two-thirds equals zero point six with the 6 repeating.

3.  $\frac{1}{6} = .1\overline{6}$

Answer 3: One-sixth equals point one six with the 6 repeating.

4.  $\frac{5}{6} = .8\overline{3}$

Answer 4: Five-sixths equals point eight three with the 3 repeating.

5.  $\frac{1}{9} = 0.\bar{1}$

Figure 1 shows a sequence of 10 diagrams illustrating the evolution of a pattern of black dots on a 3x6 grid. The pattern starts as a single dot at (1,1) and grows by adding dots at the ends of horizontal and vertical segments. The sequence shows the pattern expanding from left to right and top to bottom, eventually filling the grid.

Answer 5: One-ninth equals zero point one with the 1 repeating.

6.  $\frac{5}{9} = 0.\overline{5}$

Figure 1 shows four 3x3 dot patterns. Pattern (a) has 10 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), and (3,4). Pattern (b) has 10 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), and (3,4). Pattern (c) has 10 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), and (3,4). Pattern (d) has 10 dots: (1,1), (1,2), (1,3), (2,1), (2,2), (2,3), (3,1), (3,2), (3,3), and (3,4).

Answer 6: Five-ninths equals zero point five with the 5 repeating.

7.  $\frac{1}{12} = .08\bar{3}$

Answer 7: One-twelfth equals point zero eight three with the 3 repeating.

8.  $\frac{5}{12} = 0.4\overline{16}$

The figure consists of 10 diagrams arranged in a single row, each showing a pattern of black dots on a grid. The patterns evolve from left to right. The first diagram shows a small cluster of dots. The second diagram shows a more complex shape. The third diagram shows a larger cluster. The fourth diagram shows a more complex shape. The fifth diagram shows a larger cluster. The sixth diagram shows a more complex shape. The seventh diagram shows a larger cluster. The eighth diagram shows a more complex shape. The ninth diagram shows a larger cluster. The tenth diagram shows a more complex shape.

Answer 8: Five-twelfths equals zero point four one six with the 6 repeating.