

Radicals Lesson 6

Nested Radical Expressions

Activity Answer Key

Write the following nested radical expressions. All fractions use the horizontal fraction line. Also, number each problem. [There is a braille answer document "L6-Radicals-Activity-Answers.brf" that can be used to independently check answers.]

1. the square root of three plus the square root of two end root end root

$$\sqrt{3 + \sqrt{2}}$$

Answer: 

2. the square root of five plus the square root of three plus the square root of two end root end root end root

$$\sqrt{5 + \sqrt{3 + \sqrt{2}}}$$

Answer:

3. the cube root of z plus the cube root of z minus y end root plus x end root

$$\sqrt[3]{z} + \sqrt[3]{z - y} + x$$

Answer:

4. The square root of open parenthesis three minus the square root of ten end root close parenthesis squared end root equals open absolute value three minus the square root of ten end root close absolute value equals the square root of ten end root minus three.

$$\sqrt{(3 - \sqrt{10})^2} = |3 - \sqrt{10}| = \sqrt{10} - 3$$

Answer:

5. The square root of the fifth root of z end root end root equals the fifth root of the square root of z end root end root equals the tenth root of z end root.

$$\sqrt{\sqrt[5]{z}} = \sqrt[5]{\sqrt{z}} = \sqrt[10]{z}$$

Answer:

Figure 1 displays 20 small plots arranged in two rows of ten. Each plot shows a different spatial pattern of black dots on a white background. The patterns vary in density and arrangement, representing different spatial processes. The top row shows patterns with varying degrees of clustering and dispersion, while the bottom row shows more regular and structured patterns.

6. The square root of open fraction the square root of twenty-five end root over nine close fraction end root equals open fraction the square root of five end root over the square root of nine end root close fraction equals open fraction the square root of five end root over three close fraction.

$$\sqrt{\frac{\sqrt{25}}{9}} = \frac{\sqrt{5}}{\sqrt{9}} = \frac{\sqrt{5}}{3}$$

Answer: