


Nested Radical Expressions Activity

Write the following nested radical expressions. Also, number each problem.

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

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

Answer: 

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

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

Answer:

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

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

Answer: 

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

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.

Answer: 

Figure 1 shows a 3x10 grid of dots. The first two columns are filled with dots, representing the identity matrix. The next eight columns contain various patterns of dots, representing different matrices. The last column is empty.

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

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.

Answer: 

$$6. \sqrt{\frac{\sqrt{25}}{9}} = \frac{\sqrt{5}}{\sqrt{9}} = \frac{\sqrt{5}}{3}$$

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.

Answer: 
