Simplify the square root of the following:

We will perform the next operations with square roots

$$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$$

$$\sqrt{a * b} = \sqrt{a} * \sqrt{b}$$

$$\sqrt{a^2} = a$$

Those rules are true for any positive numbers **a and b**

$$\sqrt{\frac{3}{27}} = \sqrt{\frac{1}{9}} = \frac{\sqrt{1}}{\sqrt{9}} = \frac{1}{\sqrt{3^2}} = \frac{1}{3}$$

$$\sqrt{\frac{3}{12}} = \sqrt{\frac{1}{4}} = \frac{\sqrt{1}}{\sqrt{2^2}} = \frac{1}{2}$$

$$\sqrt{\frac{20}{5}} = \sqrt{4} = \sqrt{2^2} = 2$$

Also we can go another way: first break root on the root of the numerator and denominator take a square root and cut the remaining square roots

$$\sqrt{\frac{45}{5}} = \frac{\sqrt{45}}{\sqrt{5}} = \frac{\sqrt{9 * 5}}{\sqrt{5}} = \frac{\sqrt{9} * \sqrt{5}}{\sqrt{5}} = \sqrt{9} = \sqrt{3^2} = 3$$

$$\sqrt{\frac{2}{50}} = \frac{\sqrt{2}}{\sqrt{50}} = \frac{\sqrt{2}}{\sqrt{25 * 2}} = \frac{\sqrt{2}}{\sqrt{25} * \sqrt{2}} = \frac{1}{\sqrt{25}} = \frac{1}{\sqrt{5^2}} = \frac{1}{5}$$

$$\sqrt{\frac{63}{7}} = \sqrt{9} = 3$$

$$\sqrt{\frac{32}{8}} = \sqrt{4} = 2$$

$$\sqrt{\frac{27}{75}} = \sqrt{\frac{3 * 9}{3 * 25}} = \sqrt{\frac{9}{25}} = \frac{\sqrt{9}}{\sqrt{25}} = \frac{3}{5}$$

$$\sqrt{0.0081} = \sqrt{\frac{81}{10000}} = \frac{\sqrt{9^2}}{\sqrt{100^2}} = \frac{9}{100} = 0.09$$