

Hướng dẫn giải bài tập bài 32 trang 19 SGK toán đại số lớp 9 tập 1

Đề bài:

Tính

$$a) \sqrt{1\frac{9}{16} \cdot 5\frac{4}{9} \cdot 0,01};$$

$$b) \sqrt{1,44 \cdot 1,21 - 1,44 \cdot 0,4};$$

$$c) \sqrt{\frac{165^2 - 124^2}{164}};$$

$$d) \sqrt{\frac{149^2 - 76^2}{457^2 - 384^2}}.$$

Đáp án:

a) Ta có:

$$\begin{aligned}\sqrt{1\frac{9}{16} \cdot 5\frac{4}{9} \cdot 0,01} &= \sqrt{\frac{1 \cdot 16 + 9}{16} \cdot \frac{5 \cdot 9 + 4}{9} \cdot \frac{1}{100}} \\ &= \sqrt{\frac{16 + 9}{16} \cdot \frac{45 + 4}{9} \cdot \frac{1}{100}} \\ &= \sqrt{\frac{25}{16} \cdot \frac{49}{9} \cdot \frac{1}{100}} \\ &= \sqrt{\frac{25}{16}} \cdot \sqrt{\frac{49}{9}} \cdot \sqrt{\frac{1}{100}} \\ &= \frac{\sqrt{25}}{\sqrt{16}} \cdot \frac{\sqrt{49}}{\sqrt{9}} \cdot \frac{\sqrt{1}}{\sqrt{100}} \\ &= \frac{\sqrt{5^2}}{\sqrt{4^2}} \cdot \frac{\sqrt{7^2}}{\sqrt{3^2}} \cdot \frac{1}{\sqrt{10^2}} \\ &= \frac{5}{4} \cdot \frac{7}{3} \cdot \frac{1}{10} = \frac{5 \cdot 7 \cdot 1}{4 \cdot 3 \cdot 10} = \frac{35}{120} = \frac{7}{24}.\end{aligned}$$

b) Ta có:

$$\begin{aligned}\sqrt{1,44.1,21 - 1,44.0,4} &= \sqrt{1,44(1,21 - 0,4)} \\ &= \sqrt{1,44.0,81} \\ &= \sqrt{1,44} \cdot \sqrt{0,81} \\ &= \sqrt{1,2^2} \cdot \sqrt{0,9^2} \\ &= 1,2.0,9 = 1,08.\end{aligned}$$

c) Ta có:

$$\begin{aligned}\sqrt{\frac{165^2 - 124^2}{164}} &= \sqrt{\frac{(165 - 124)(165 + 124)}{164}} \\ &= \sqrt{\frac{41.289}{41.4}} = \sqrt{\frac{289}{4}} \\ &= \frac{\sqrt{289}}{\sqrt{4}} = \frac{\sqrt{17^2}}{\sqrt{2^2}} = \frac{17}{2}.\end{aligned}$$

Câu d: Ta có:

$$\begin{aligned}\sqrt{\frac{149^2 - 76^2}{457^2 - 384^2}} &= \sqrt{\frac{(149 - 76)(149 + 76)}{(457 - 384)(457 + 384)}} \\ &= \sqrt{\frac{73.225}{73.841}} = \sqrt{\frac{225}{841}} \\ &= \frac{15^2}{29^2} = \frac{15}{29}.\end{aligned}$$