

1) Vereinfache und berechne:

$$1a: \frac{\sqrt{\frac{21}{20}}}{\sqrt{\frac{7}{15}}} = \frac{3}{2}$$

$$1b: \frac{\sqrt{\frac{8}{9}}}{\sqrt{\frac{50}{81}}} = \frac{6}{5}$$

$$1c: \frac{\sqrt{\frac{1}{3}}}{\sqrt{\frac{3}{4}}} = \frac{2}{3}$$

$$1d: \frac{\sqrt{\frac{35}{3}}}{\sqrt{10} \cdot \sqrt{\frac{7}{5}}} = \sqrt{\frac{25}{30}} = \sqrt{\frac{5}{6}} = 0,9129$$

$$1e: \sqrt{\sqrt{27}} \cdot \sqrt{\sqrt{8}} \cdot \sqrt{\sqrt{2}} \cdot \sqrt{\sqrt{3}} = \sqrt{\sqrt{1296}} = \sqrt{36} = 6$$

2) Mache den Nenner rational und vereinfache:

$$2a: \frac{1}{\sqrt{2}} = \frac{1}{2} \sqrt{2}$$

$$2b: \frac{4}{\sqrt{6}} = \frac{4}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{4}{6} \sqrt{6} = \frac{2}{3} \sqrt{6}$$

$$2c: \frac{\sqrt{6}}{\sqrt{5}} = \frac{\sqrt{6}}{\sqrt{5}} \cdot \frac{\sqrt{5}}{\sqrt{5}} = \frac{1}{5} \sqrt{30}$$

$$2d: \frac{\sqrt{15}}{\sqrt{2} \cdot \sqrt{3}} = \frac{\sqrt{15}}{\sqrt{6}} \cdot \frac{\sqrt{6}}{\sqrt{6}} = \frac{1}{6} \cdot \sqrt{90} = \frac{3}{6} \sqrt{10} = \frac{1}{2} \sqrt{10}$$

$$2e: \frac{8 \cdot \sqrt{5}}{\sqrt{8}} = \frac{8\sqrt{5}}{\sqrt{8}} \cdot \frac{\sqrt{8}}{\sqrt{8}} = \frac{8}{8} \sqrt{40} = \sqrt{40} = 2\sqrt{10}$$