

$$3a) \sqrt{2} \cdot \sqrt{18} = \sqrt{36} = 6$$

$$b) \sqrt{27} \cdot \sqrt{3} = \sqrt{81} = 9$$

$$c) \sqrt{6} \cdot \sqrt{54} = \sqrt{6 \cdot 6 \cdot 9} = \sqrt{36} \cdot \sqrt{9} = 6 \cdot 3 = 18$$

$$d) \sqrt{7} \cdot \sqrt{28} = \sqrt{7} \cdot \sqrt{7 \cdot 4} = \sqrt{49} \cdot \sqrt{4} = 7 \cdot 2 = 14$$

$$e) \sqrt{2,5} \cdot \sqrt{10} = \sqrt{2,5 \cdot 10} = \sqrt{25} = 5$$

$$f) \sqrt{12\frac{1}{2}} \cdot \sqrt{50} = \sqrt{12\frac{1}{2} \cdot 50} = \sqrt{12\frac{1}{2} \cdot 2 \cdot 25} = \sqrt{25 \cdot 25} = 25$$

$$g) \sqrt{9,8} \cdot \sqrt{5} = \sqrt{9,8 \cdot 5} = \sqrt{\frac{98}{10} \cdot 5} = \sqrt{\frac{98}{2}} = \sqrt{49} = 7$$

$$h) \sqrt{4,8} \cdot \sqrt{30} = \sqrt{\frac{48}{10} \cdot 30} = \sqrt{48 \cdot 3} = \sqrt{16 \cdot 3 \cdot 3} = \sqrt{16} \cdot \sqrt{9} = 4 \cdot 3 = 12$$

$$i) \sqrt{3} \cdot \sqrt{0,2} \cdot \sqrt{5,4} = \sqrt{3 \cdot 0,2 \cdot 5,4} = \sqrt{0,6 \cdot 5,4} = \sqrt{0,6 \cdot 0,6 \cdot 9} = 0,6 \cdot 3 = 1,8$$

j)

$$k) \sqrt{40} \cdot \sqrt{5} \cdot \sqrt{4,5} = \sqrt{4 \cdot 10 \cdot 5 \cdot 4,5} = \sqrt{4 \cdot 5 \cdot 45} = \sqrt{4} \cdot \sqrt{5 \cdot 5} \cdot \sqrt{9} = 60$$

$$l) \sqrt{6} \cdot \sqrt{32} \cdot \sqrt{30} = \sqrt{6 \cdot 32 \cdot 30} = \sqrt{6 \cdot 96} = \sqrt{6 \cdot 6 \cdot 16} = 6 \cdot 4 = 24$$

$$m) \sqrt{3} \cdot \sqrt{6} \cdot \sqrt{8} = \sqrt{3 \cdot 6 \cdot 8} = \sqrt{3 \cdot 3 \cdot 2 \cdot 2 \cdot 4} = 3 \cdot 2 \cdot 2 = 12$$

$$4a) \sqrt{32} : \sqrt{8} = \sqrt{32:8} = \sqrt{4} = 2$$

$$b) \sqrt{98} : \sqrt{2} = \sqrt{98:2} = \sqrt{49} = 7$$

$$c) \sqrt{180} : \sqrt{5} = \sqrt{180:5} = \sqrt{36} = 6$$

$$d) \sqrt{52} : \sqrt{0,13} = \sqrt{52:0,13} = \sqrt{400} = 20$$

$$e) \sqrt{\frac{3,6}{10}} = \sqrt{0,36} = 0,6$$

$$f) \sqrt{\frac{1,25}{0,05}} = \sqrt{\frac{125}{5}} = \sqrt{25} = 5$$

$$g) \frac{\sqrt{0,36}}{\sqrt{0,04}} = \sqrt{\frac{0,36}{0,04}} = \sqrt{\frac{36}{4}} = \sqrt{9} = 3$$

$$h) \frac{\sqrt{6,48}}{\sqrt{0,02}} = \sqrt{\frac{6,48}{0,02}} = \sqrt{\frac{648}{2}} = \sqrt{324} = 18$$

$$5a) \sqrt{\frac{4}{3}} \cdot \sqrt{27} = \sqrt{\frac{4}{3} \cdot \frac{27}{1}} = \sqrt{4 \cdot 3} = \sqrt{4} \cdot \sqrt{3} = 2 \cdot 3 = 6$$

$$b) \sqrt{5\frac{1}{3}} \cdot \sqrt{12} = \sqrt{\frac{16}{3} \cdot 12} = \sqrt{16 \cdot 4} = 4 \cdot 2 = 8$$

$$c) \frac{\sqrt{17} \cdot \sqrt{3,5} \cdot \sqrt{7}}{\sqrt{8,5}} = \sqrt{\frac{17 \cdot 3,5 \cdot 7}{8,5}} = \sqrt{2 \cdot 3,5 \cdot 7} = 7$$

$$d) \frac{\sqrt{10 \cdot 2,16}}{\sqrt{2,16} \cdot \sqrt{2,5}} = \sqrt{\frac{10 \cdot 2,16}{2,16 \cdot 2,5}} = \sqrt{\frac{10}{2,5}} = \sqrt{4} = 2$$

$$e) \sqrt{3} : \sqrt{\frac{3}{16}} = \sqrt{3 \cdot \frac{16}{3}} = \sqrt{16} = 4$$

$$f) \sqrt{3} : \sqrt{\frac{16}{3}} = \sqrt{3 \cdot \frac{3}{16}} = \sqrt{\frac{9}{16}} = \frac{\sqrt{9}}{\sqrt{16}} = \frac{3}{4}$$

$$g) \sqrt{\frac{6}{35}} : \sqrt{\frac{10}{21}} = \sqrt{\frac{\frac{3}{5} \cdot \frac{21}{5}}{\frac{25}{5} \cdot \frac{10}{5}}} = \frac{3}{5}$$

$$h) \sqrt{\frac{3}{8}} : \sqrt{\frac{8}{27}} = \sqrt{\frac{3}{8} \cdot \frac{27}{8}} = \sqrt{\frac{81}{64}} = \frac{\sqrt{81}}{\sqrt{64}} = \frac{9}{8}$$

$$6a) \sqrt{r} \cdot \sqrt{r^3} = \sqrt{r \cdot r^3} = \sqrt{r^4} = \cancel{r^2} r^2$$

$$b) \sqrt{3s} \cdot \sqrt{3s^3} = \sqrt{3s \cdot 3s^3} = \sqrt{9s^4} = \sqrt{9} \cdot \sqrt{s^4} = 3 \cdot s^2$$

$$c) \sqrt{0,4t^2} \cdot \sqrt{0,4t^4} = \sqrt{0,4 \cdot 0,4 \cdot t^6} = 0,4 \cdot t^3$$

$$d) \sqrt{8t^2} \cdot \sqrt{2t} \cdot \sqrt{3t} = \sqrt{8 \cdot 2} \sqrt{t^4} \cdot \sqrt{3} = 4 \cdot t^2 \cdot 3 = 12t^2$$

$$e) \sqrt{p} \cdot \sqrt{p^2q^2} = \sqrt{p^2q^2} = p \cdot q$$

$$f) \sqrt{2x} \cdot \sqrt{18x} = \sqrt{2 \cdot x \cdot 18 \cdot x} = \sqrt{36x^2} = 6 \cdot x$$

$$g) \sqrt{6b} \cdot \sqrt{24a^2b} = \sqrt{6 \cdot b \cdot 24 \cdot a^2 \cdot b} = \sqrt{6 \cdot 6 \cdot 4 \cdot a^2 b^2} = 6 \cdot 2 \cdot a \cdot b = 12ab$$

$$h) \sqrt{5t} \cdot \sqrt{13s^3t} \cdot \sqrt{2,6s} = \sqrt{5 \cdot 13 \cdot 2,6 \cdot t \cdot s^3 \cdot t \cdot s} = \sqrt{13 \cdot 13 \cdot t^2 \cdot s^4} = 13ts^2$$

$$8a) (\sqrt{a} \cdot \sqrt{b}) \cdot \sqrt{abc}$$

$$= \sqrt{(a \cdot b) \cdot (abc)}$$

$$= \sqrt{\frac{a \cdot b}{a \cdot b \cdot c}} = \sqrt{\frac{1}{c}}$$

$$b) \sqrt{ab^2} \cdot \sqrt{a^2b} = \sqrt{\frac{ab^2}{a^2b}} = \sqrt{\frac{b}{a}}$$

$$c) \sqrt{\frac{x}{y}} \cdot \sqrt{\frac{y}{z}} \cdot \sqrt{\frac{z}{x}} = \sqrt{\frac{x \cdot y \cdot z}{y \cdot z \cdot x}} = \sqrt{1} = 1$$

$$d) \sqrt{\frac{2x^2}{y}} \cdot \sqrt{2y} = \sqrt{\frac{2x^2 \cdot 2y}{y}} = 2x$$

$$e) \sqrt{\frac{3x^2y}{z}} \cdot \sqrt{zy} = \sqrt{\frac{3x^2 \cdot y^3 \cdot z \cdot y}{z}} = \cancel{3} x y$$

$$f) \sqrt{\frac{x}{y}} \cdot \sqrt{\frac{zy}{x}} = \sqrt{\frac{x}{y} \cdot \frac{z \cdot y}{x}} = \sqrt{z}$$

$$g) \sqrt{\frac{2c^2}{a}} \cdot \sqrt{\frac{a^3}{32}} = \sqrt{\frac{2 \cdot c^2 \cdot a^3}{\frac{32 \cdot a}{16}}} = \sqrt{\frac{c^2 a^2}{16}} = \frac{1}{4} ca$$

$$7a) \sqrt{a^2} : \sqrt{a} = \sqrt{a^2 : a} = \sqrt{a}$$

$$b) \sqrt{b^3} : \sqrt{b} = \sqrt{b^3 : b} = \sqrt{b^2} = |b|$$

$$c) \sqrt{c^2 d} : \sqrt{d} = \sqrt{c^2 d : d} = \sqrt{c^2} = |c|$$

$$d) \sqrt{d} : \sqrt{d e^2} = \sqrt{d : (d e^2)} = \sqrt{\frac{d}{d e^2}} = \sqrt{\frac{1}{e^2}} = \frac{1}{|e|}$$

$$e) \sqrt{30^3} : \sqrt{270} = \sqrt{\frac{30^3}{270}} = \sqrt{\frac{u^3}{9}} = \frac{u}{3}$$

$$f) \sqrt{12v} : \sqrt{3v^3} = \sqrt{\frac{12v}{3v^3}} = \sqrt{\frac{4}{v^2}} = \frac{2}{v}$$

$$g) \sqrt{0,01s} : \sqrt{0,09t^2 s} = \sqrt{\frac{0,01s}{0,09t^2 s}} = \sqrt{\frac{1}{9t^2}} = \frac{1}{3|t|}$$

$$h) \sqrt{72x} : \sqrt{2xy^2} = \sqrt{\frac{36 \cancel{72} x}{2xy^2}} = \sqrt{\frac{36}{y^2}} = \frac{6}{|y|}$$

$$i) \frac{\sqrt{12u^3}}{\sqrt{3u}} = \sqrt{\frac{12u^3}{3u}} = \sqrt{4u^2} = 2u$$

$$j) \frac{\sqrt{8v}}{\sqrt{2v^3}} = \sqrt{\frac{8v}{2v^3}} = \sqrt{\frac{4}{v^2}} = \frac{2}{v}$$

$$k) \frac{\sqrt{0,09x^4}}{\sqrt{0,16x^2}} = \frac{0,3x^2}{0,4|x|} = \frac{3}{4} |x|$$

$$m) \frac{\sqrt{\frac{a^2}{b}}}{\sqrt{b}} = \sqrt{\frac{\frac{a^2}{b}}{b}} = \sqrt{\frac{a^2}{b} \cdot \frac{1}{b}} = \sqrt{\frac{a^2}{b^2}} = \frac{|a|}{b}$$

$$b > 0$$