Berechne:

a) $\frac{\sqrt{500}}{\sqrt{25}\cdot\sqrt{10}}=\sqrt{2}$

b) $\frac{\sqrt{180}}{\sqrt{20}}=3$

Gib die Definitionsmenge an und berechne:

c) $\frac{\sqrt{63xy^3}\cdot\sqrt{56x^2y}}{\sqrt{7y}\cdot\sqrt{21xy}}=2\sqrt{6}\cdot\sqrt{\frac{x^3y^4}{xy^2}}=2\sqrt{6}\cdot\sqrt{x^2y^2}=2\sqrt{6}xy$

$x, y \neq 0,\ x>0; y>0$

d) $\frac{\sqrt{48a^4bc^3}}{\sqrt{3b^3c^5}}=4\cdot\sqrt{\frac{a^4}{b^2c^2}}=4\frac{a^2}{bc}$

$b, c \neq 0\ und\ b>0;\ c>0$

Mache den Nenner rational:

e) $\frac{3\sqrt{5}}{2\sqrt{5}-5}=-3\sqrt{5}-6$

f) $\frac{4-\sqrt{3}}{4+\sqrt{3}}=\frac{(4-\sqrt{3})\cdot(4-\sqrt{3})}{(4+\sqrt{3})\cdot(4-\sqrt{3})}=\frac{19-8\sqrt{3}}{13}$

Fasse zusammen:

g) $4\cdot\sqrt{y+3}-\frac{3y}{\sqrt{y+3}}=\frac{4\cdot\sqrt{y+3}\cdot\sqrt{y+3}}{\sqrt{y+3}}-\frac{3y}{\sqrt{y+3}}=\frac{4\cdot(y+3)-3y}{\sqrt{y+3}}=\frac{4y+12-3y}{\sqrt{y+3}}=\frac{y+12}{\sqrt{y+3}}$