

Assuming you're given  $v = kx^{\frac{-1}{2}} \cdot y^{\frac{1}{2}} \cdot z^{\frac{-1}{2}}$

1) Rewrite with root symbols:  $v = k \cdot \frac{1}{\sqrt{x}} \cdot \sqrt{y} \cdot \frac{1}{\sqrt{z}}$

2) Now you can rewrite again:  $v = k \cdot \sqrt{\frac{y}{x}} \cdot \frac{1}{\sqrt{z}}$

3) Now you can rewrite again:  $v = k \cdot \sqrt{\frac{y}{xz}}$

4) If you want to solve for k, proceed as shown:  $v = k \cdot \frac{\sqrt{y}}{\sqrt{xz}}$  break the root symbol into two

5) Multiply both sides by  $\frac{\sqrt{xz}}{\sqrt{y}}$ . This will isolate k on the right.  $\frac{\sqrt{xz} \cdot v}{\sqrt{y}} = k$

6) Now rewrite again:  $k = v \sqrt{\frac{xz}{y}}$