

$|\langle -2, -4, 2 \rangle| = \sqrt{(-2)^2 + (-4)^2 + (2)^2} = \sqrt{24} = 2\sqrt{6}$, so a unit vector in the direction of $\langle -2, -4, 2 \rangle$ is $\mathbf{u} = \frac{1}{2\sqrt{6}} \langle -2, -4, 2 \rangle$.

A vector in the same direction but with length 9 is $9\mathbf{u} = 9 \cdot \frac{1}{2\sqrt{6}} \langle -2, -4, 2 \rangle = \left\langle \frac{-9}{\sqrt{6}}, \frac{-18}{\sqrt{6}}, \frac{9}{\sqrt{6}} \right\rangle$ or $\langle -3\sqrt{6}/2, -3\sqrt{6}, 3\sqrt{6}/2 \rangle$.