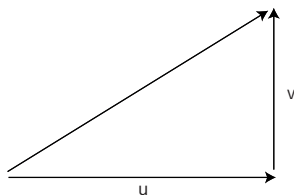


PRACTICE QUIZ 1

1. Use vector algebra and the properties of the dot product to prove the Pythagorean theorem.



Hints:

1. Refer to the above diagram.
2. Note that the length of the hypotenuse is given by $\|u + v\|^2$.
3. Recall that $\|u + v\|^2 = (u + v) \cdot (u + v)$.
4. Simplify $(u + v) \cdot (u + v)$, and note that $u \cdot v = 0$.