Answer on Question #52182 – Math – Vector Calculus

1. b cos Q measures
the length of the projection of a on a line parallel to a.
the length of the projection of b on a line equal to b.
the length of the projection of b on a line parallel to b.
the length of the projection of a on a line equal to a.

Solution

The vector projection of a vector $\vec{b}$ on a nonzero vector $\vec{a}$ is the orthogonal projection of $\vec{b}$ onto a straight line parallel to $\vec{a}$:

$$\left|\vec{b}\right| \cdot \cos Q,$$

where Q is the angle between the vectors $\vec{b}$ and $\vec{a}$.

So, $b\cos Q$ is the length of the projection of vector $\vec{b}$ on a line parallel to the vector $\vec{a}$.

Answer: there is no an exact variant of the answer.