Let $\overrightarrow{\mathbf{a}} = <3, 5>$ and $\overrightarrow{\mathbf{b}} = <7, 2>$.

1. Find the projection of $\overrightarrow{\mathbf{a}}$ onto $\overrightarrow{\mathbf{b}}$

2. Write $\overrightarrow{\mathbf{a}}$ as a sum of its projection onto $\overrightarrow{\mathbf{b}}$ and a vector perpendicular to $\overrightarrow{\mathbf{b}}$.

Let $\overrightarrow{\mathbf{a}} = <1, 2, 3>$ and $\overrightarrow{\mathbf{b}} = <4, 5, 6>$.

1. Find $\overrightarrow{\mathbf{a}} \times \overrightarrow{\mathbf{b}}$.

2. Check that $\overrightarrow{\mathbf{a}} \times \overrightarrow{\mathbf{b}}$ is in fact orthogonal to both $\overrightarrow{\mathbf{a}}$ and $\overrightarrow{\mathbf{b}}$.

3. Find $\overrightarrow{\mathbf{b}} \times \overrightarrow{\mathbf{a}}$. Is the cross product a commutative operation?