

Lesson 2: Scalar Multiples, Collinear Vectors

The vector $k\mathbf{a}$, (where k is a nonzero constant) is a vector parallel to \mathbf{a} , whose magnitude is $|k||\mathbf{a}|$.

The vector is in the same direction as \mathbf{a} , when $k > 0$

The vector has the opposite direction as \mathbf{a} , when $k < 0$

The vector is longer than \mathbf{a} , when $|k| > 1$

The vector is shorter than \mathbf{a} , when $|k| < 1$

These vectors are said to be **collinear**.

Example.

A) Mr. Forget drives 5.0 km East from home to a gas station and then back West to the local bakery for another 2.0 km.

What is Mr. Forget's total displacement?

B) Why is addition of collinear vectors much simpler than adding arbitrary vectors?

