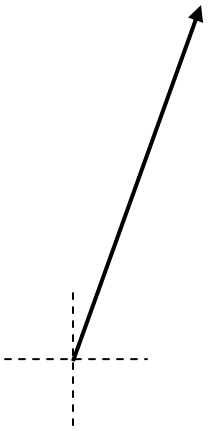
Adding Vectors: Distance/Speed vs. Displacement/Velocity

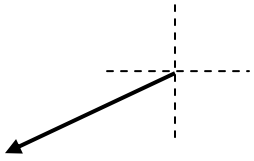
Name: _____ Date: _____

- Show all work, all units, label the vectors. Use the most suitable method (either algebra or vectors)

Understanding Directions & Scales with Vectors

SCALE: 1 cm = 150 km





1. Danielle walks 200 m [E], then 100 m [W], then 700m [E]. Using the algebraic method, calculate the resultant displacement and total distance travelled.

2. Kieran drives his Lamborghini down the street. He travels 85 m [E] in 1.5 seconds, stops to say hi to friends for 5 minutes and then travels 285 m [W] in 4 seconds to his final position. Calculate both his resultant displacement and total distance travelled? Also, calculate the average velocity and speed.

3. Aidan drives her mustang convertible 150 km [N] to talk to Christine. She talks with Tara for a while and then travels 250 km [E] to meet with another friend and then travels 100 km [S20^{o}E] to get home. Calculate her resultant displacement and total distance travelled.

4. Laura walks her friend's pet lizard 800 m [E] in 1 hour. She then decides to walk 400 m [S] for 0.5 hours. She then walks 100 m [W30^{o}N] for 1 hour. Calculate her average speed and velocity.