

Resultant Vectors Worksheet

Part I - Find the resultant, \vec{R} , graphically.

1. From home a car drives 16 km [E], and then 24 km [S].
2. A person runs 2.0 m/s [N] then 4.0 m/s [E30.°N].
3. A ball is kicked 25 m [W20.0°S] then kicked again 35 m [W60.0°N].
4. A basketball is passed 15 m due West, then 20. m due North, and finally 8.0 m due East.
5. A police car drives 70. km due North, then 80. km [E40.°N], and finally 50. km [E50.0°S].
6. A laser beam travels 1500 km [W30.°S], 2100 km [E20.°S], and finally 2700 km [W10.°S].

Part II - Find the indicated vector graphically.

1. A rescue boat is located 150 km [E30°N] from port. A call for help comes in from a boat located 225 km [E20°S] from the same port. Calculate the position of the emergency from the rescue boat. (165 km [E67°S])
2. While hiking from base camp you walk 75 m [E], then 55 m [E60°N], and finally 60 m [W35°N]. You then receive a snap-chat from your friends who are located 40 m [E20°S] of base camp. Determine the direction and distance you must walk to meet up with your friends. (97 m [W80°S])
3. A strong wind of 45 m/s [W15°N] is blowing on an airplane. The pilot wants the resulting velocity of her plane to be 70 m/s [E42°N]. What velocity must the pilot fly the plane? (102 m/s [E20°N])