

1. A plane normally flies 190 mph if there is no wind. Today there is a 10 mph wind.

a. How fast would the plane actually travel if it flies with the wind (**tailwind**)?

b. How fast would the plane actually travel if it flies against the wind (**headwind**)?

c. How far could the plane fly in 2.25 hrs if it flies with a tailwind?

d. How far could the plane fly in 2.5 hours if it flies with a headwind?

2. A plane flies **P** mph without any wind and the wind is blowing **W** mph.

a. Write an expression for the speed of the plane with a tailwind.

b. Write an expression for the speed of the plane with a headwind.

c. Write an equation using $d = r \cdot t$ to model the fact that the plane flies 720 miles from one city to another city with a headwind in 3.6 hours.

d. Write an equation using $d = r \cdot t$ to model the fact that the plane flies the 720 mile return trip between the same two cities with a tailwind in 3 hours.

e. Solve this system of equations to find the speed of the wind **W** and the speed the plane can fly with no wind **P**.