Solving Distance=Rate*Time Problems

A. A small plane can fly 400 miles in the same amount of time a jet can fly 1000 miles. If the jet's speed is 300 mph more than the speed of the small plane, find the speeds of both planes. [d = r * t   or t = d/r]

Unknowns: P = speed of plane   Equations: J = P + 300
       J = speed of jet   400/P = 1000/J   (since times are equal)

B. Two canoeists make a 30-mile trip in 7 hours. If they paddle at a rate of 4.5 miles per hour part of the time and 4 miles per hour for the remaining time, find how many hours they traveled at each rate.

Unknowns: F = time paddled first   Equations: F + S = 7   (total time)
       S = time paddled second   4.5F + 4S = 30   (total distance)

C. Spike averaged 45 mph driving from Rochester to Syracuse and 49 mph driving from Syracuse to Albany. If he drove a total of 237 miles in 5 hours, find how far is it from Syracuse to Albany.

Unknowns: R = time from Rochester to Syracuse Equations: R + S = 5 (total time)
       S = time from Syracuse to Albany   45R + 49S = 237 (dist)

Solve for S, then use the time to calculate the distance - the question in this problem.

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