

Two trains leave stations 40 miles apart at the same time heading toward one another on parallel tracks. Train A is traveling 30 miles per hour, while Train B is going 50 miles per hour. The dispatcher wonders how long it will take them to meet each other.

Using the formula $d=rt$, where d is the distance traveled (in miles), r is the rate the train is traveling (in miles per hour) and t is the time (in hours), identify a system of equations you can use to solve this problem.