**Word Problems Involving Rational Equations** /24

Solve the following problems showing your work in a clear, logical format. Final answer should be clearly marked and include units where necessary.

**1.** A liquid fertilizer requires dilution before use. How much liquid fertilizer must be added to 600 mL of water to make a 25% fertilizer solution?

**2.** Leah and Rain travel 2 km to the aquatic centre. Leah rides her bike while Rain rides an electric scooter. Leah’s average speed is 1 km/h greater than Rain’s. Leah arrives at the centre 10 min before Rain. What is Rain’s average speed on her scooter?

**3.** Working together, Nathaniel and his little sister Asha can rake the leaves in their backyard in 12 min. Working alone, Asha can rake the leaves in 30 min. How long would it take Nathaniel to rake the leaves on his own?

**4.** A kayaker paddles 2 km upstream in the same time that it takes to paddle 3 km downstream. The average speed of the current is 1 km/h. What is the average speed of the kayak in still water?

**5.** A natural number, *N*, is 4 less than another natural number, *M*. The sum of the reciprocals of *M* and *N* is 5 times the reciprocal of twice the value of *M*. What are the two numbers?

**6.** Ginelle is a master carpenter, and Tonya is her apprentice. It takes Tonya 18 h longer to install a subfloor for a new home than it takes Ginelle. Working together, they can install a subfloor in 12 h. How long would it take each person to install a subfloor working alone?