1. There are 2 rational expressions, P/Q and R/S, where Q = x2 – 9, R = x + 1, and S = x2 + x – 6.   
   If P/Q ÷ R/S = A/B, where A = 4x2 – 13x + 10, determine an expression for P and B.
2. Rowing at 8 km/h in still water, Rina and Bhanu take 16 hours to row 39 km down a river and 39 km back. Find the speed of the current.

3. A rectangular prism has all in metres.

1. Determine a simplified expression for the volume of the rectangular prism. Express your answer as a quotient of two polynomials in standard (not factored) form, and state any restrictions.
2. Determine the volume when x = 4 metres.

4. There are 2 rational expressions, P/Q and R/S, where Q = x2 – 9, R = x + 1, and S = x2 + x – 6.   
If P/Q + R/S = A/B, where A = 4x2 – 12x + 5, determine an expression for P.

5. On the 42 km go-kart course, Arshia drives 0.4 km/h faster than Sarah, but has engine trouble and stops for ½ hour. She arrives 15 minutes after Sarah at the end of the course. How fast did each girl drive?

**PRACTICE**

1. An open cardboard box with a square base with a side of x cm has a volume of 100 cm3.

* 1. Express the height of the box, h, in terms of x.
  2. Express the surface area of the 5 sides of the box in terms of x.

2. A rectangular board has an area of 6000 cm2 and a width of *w* cm.

1. Write an expression for the length of the board.
2. Write an expression for the perimeter of the board.
3. If the width is increased by x cm, write an expression for the new perimeter of the board.
4. Write an expression for the change in perimeter (P2 – P1).

3. One lap of a motorcycle race is 650 m. At the start of the race, Genna sets off 4 seconds after Tom does, but she drives her motorcycle 5 m/s faster and finishes the lap 2.5 seconds sooner than he does. Find their speeds.

4. Marissa and Jovanna enter a 200-km bike race. Marissa cycles 5 km/h faster than Jovanna, but her bicycle gets a flat tire, which takes ½ hour to repair. If the 2 girls finish the race in a tie, how fast was each girl cycling?