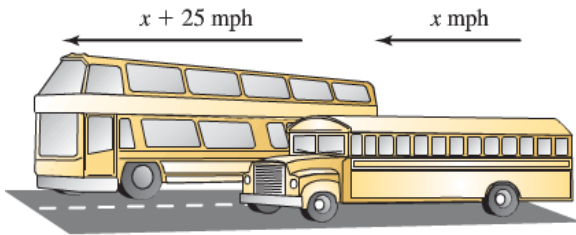1. Translate each verbal phrase or sentence into a mathematical expression or equation. Use x to represent the unknown number.
   a) twice a number, decreased by 13
   b) 15 more than one-half of a number
   c) the product of 8 more than a number and 5 less than the number
   d) the quotient of 9 and five times a nonzero number
   e) the sum of three consecutive integers is 30
   f) If the product of a number and 9 is subtracted from the number, the result is 9 more than the number. Find the number.
   g) If the quotient of a number and 6 is added to twice the number, the result is 8 less than the number. Find the number.

2. The residents of a downtown neighbourhood designed a triangular-shaped park as part of a city beautification program. The park is bounded by streets on all sides. The second angle of the triangle is 7° more than the first. The third angle is 7° less than twice the first. Find the measures of the angles.

3. Terry has $6.80 in quarters and dimes. The number of coins is 38. How many quarters and dimes does Terry have?

4. Find three consecutive odd integers such that the sum of the first, two times the second, and three times the third is 70.

5. The height and the sides of a triangle are represented by four consecutive integers. The height is the first integer and the base is the third integer. The perimeter of the triangle is 42 in. Find the area of the triangle.

6. The cost of a book at an online discount book retailer is 20% less than the retail price of the book. The total cost to purchase the book online is $33.59, which includes a shipping fee of $3.99.
   a) What is the original retail price of the book?
   b) Excluding the shipping fee, how much money was saved purchasing the book online?
   c) If the shipping fee is included, what was the actual percent discount off the original retail price?

7. The Martins negotiated the following real estate commission on the selling price of their house: 7% for the first $100,000, and 5% for the amount that exceeds $100,000.
   The realtor received a commission of $15,250 for selling the house. What was the selling price?

8. If Joan had $3000 to invest. She invested part of it in an investment paying 8% and the remainder in an investment paying 10%. If the total income on these investments was $290, then how much did she invest at each rate?

9. Mona Galland received a year-end bonus of $17,000 from her company and invested the money in an account paying 6.5%. How much additional money should she deposit in an account paying 5% so that the return on the two investments will be 6%?

10. Dried bananas sell for $0.80 per quarter-pound, and dried apricots sell for $1.00 per quarter-pound. How many pounds of apricots should be mixed with 10 pounds of bananas to get a mixture that sells for $0.95 per quarter-pound?

x + 25 mph   x mph

11. A commuter bus takes 2 hours to get downtown; an express bus, averaging 25 mph faster, takes 45 minutes to cover the same route. What is the average speed for the commuter bus?

12. Fran swims at a speed of 5 mph in still water. The Lazy River flows at a speed of 2.3 mph. How long will it take Fran to swim 1.8 mi upstream? 1.8 mi downstream?

Current 2.3 mph