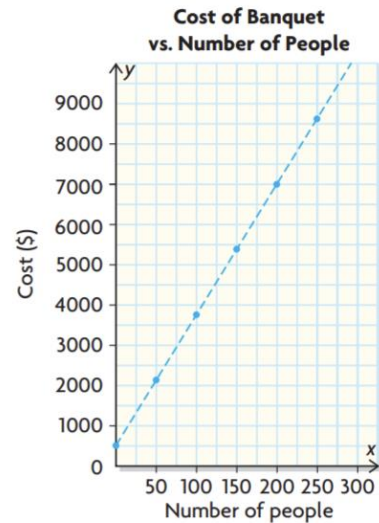## PRACTISING

4. The graph at the right shows how the charge for a banquet hall
K relates to the number of people attending a banquet.
  a) Locate the point (160, 5700) on the graph. What do these coordinates tell you about the charge for the banquet hall?
  b) What is the charge for the banquet hall if 200 people attend?
  c) Write an equation for this linear relation.
  d) Use your equation to determine how many people can attend for $3100, $4400, and $5000.
  e) Why is a broken line used for this graph?

Cost of Banquet vs. Number of People

5. Max read on the Internet that 1 U.S. gallon is approximately equal to 3.785 L.
  a) Draw a graph that you can use to convert U.S. gallons into litres.
  b) Use your graph to estimate the number of litres in 6 gallons.
  c) Use your graph to estimate the number of gallons in 14 L.

6. Melanie drove at 100 km/h from Ajax to Ottawa. She left Ajax at 2:15 p.m., with 35 L of gas in the tank. The low fuel warning light came on when 9 L was left in the tank. If Melanie's SUV uses gas at the rate of 9.5 L/100 km, estimate when the warning light came on.

7. Hank sells furniture and earns $280/week plus 4% commission.
  a) Determine the sales that Hank needs to make to meet his weekly budget requirement of $900.
  b) Write an equation for this situation, and use it to verify your answer for part a).

8. The Perfect Paving Company charges $10 per square foot to install
A interlocking paving stones, as well as a $40 delivery fee.
  a) Determine the greatest area that Andrew can pave for $3500.
  b) Andrew needs to include 5 cubic yards of sand, costing $15 per cubic yard, to the total cost of the project. How much will this added cost reduce the area that he can pave with his $3500 budget?

9. A student athletic council raised $4000 for new sports equipment and uniforms, which will be purchased 3 years from now. Until then, the money will be invested in a simple interest savings account that pays 3.5%/year.
  a) Write an equation and draw a graph to represent the relationship between time (in years) and the total value of their investment.
  b) Use the graph to determine the value of their investment after 2 years.
  c) Use the equation to determine when their investment is worth $4385.

Extending

14. The owner of a dart-throwing stand at a carnival pays 75¢ every time the bull's-eye is hit, but charges 25¢ every time it is missed. After 25 tries, Luke paid $5.25. How many times did he hit the bull's-eye?

15. Adriana earns 5% commission on her sales up to $25 000, 5.5% on any sales between $25 000 and $35 000, 6% on any sales between $35 000 and $45 000, and 7% for any sales over $45 000. Draw a graph to represent how Adriana's earnings depend on her sales. What sales volume does she need to earn $2000?