Name: _____   Date: _____

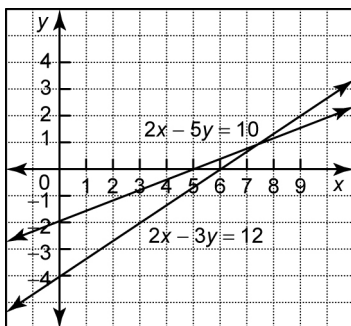# Chapter 1 Test

1. An equation for the line with slope −2 and
   y-intercept 4 is
   A $2x - y = 4$ **B** $x - y = 4$
   C $x + 2y = 4$ **D** $2x + y = 4$

2. The point $(1, -2)$ is the solution to which
   linear system?
   A $3x + 5y = 13$ **B** $x - y = 3$
       $x + y = -1$ $2x + 4y = -6$
   C $3x - y = 5$ **D** $5x + 3y = 1$
       $2x + y = 1$ $3x + 5y = -7$

3. A graph of a linear system is shown. Explain
   why each of the following is an equivalent
   linear system to the system shown in the
   graph.

   a) $y = \frac{2}{3}x - 4$ **b)** $x = 7.5$
       $y = \frac{2}{5}x - 2$ $y = 1$

   c) $2x - 3y = 12$
       $2x - 4y = 11$

4. Write a linear system for each situation.
   a) Jim is three times as old as Allison. Two
       years ago, the sum of their ages was 16.
   b) Two numbers add together to give 14 and
       differ by 4.
   c) The perimeter of a rectangle is 22 cm.
       The length is 3 cm more than the width.
   d) Erin earns twice as much as Michael every
       week. Last week, their earnings added to
       $309.40.

5. Solve each linear system by graphing.
   a) $y = 3x + 1$ **b)** $4x + 3y = 7$
       $2x - 3y = 11$ $4x - 3y = 1$
   c) $3x + y = 1$ **d)** $x + y = 4$
       $x + 4y = 4$ $3x = 10 - 2y$

6. Solve each linear system using substitution.
   a) $y = x - 4$ **b)** $y = 2x - 9$
       $2x + 5y = 1$ $x - y = 4$
   c) $x - y = 5$ **d)** $7 = b - 2a$
       $3x + y = 3$ $4 = a + b$

7. Solve each system using elimination.
   a) $x + y = 4$ **b)** $2x - 4y = -2$
       $x - y = -8$ $3x + y = 4$
   c) $5x + 7y = 3$ **d)** $3c + 2d = -12$
       $2x + 3y = 1$ $2c + 3d = -13$

8. Monique's swimming pool filter needs repair.
   She calls two companies for prices. The Pool
   BoyZ charge $70 for a service call and $40/h
   for labour. KemiKal Balance charge $50 for a
   service call and $45/h for labour.
   a) Write a linear equation for each company.
   b) Graph the two lines on the same set of axes
       and find the point of intersection.
   c) Interpret this point of intersection.
   d) If the repair will take 2.5 h, which
       company should Monique use?

9. Donny is combining two nut mixtures to create
   a new mixture. Both mixes are a combination
   of peanuts and almonds. The first mixture is
   40% almonds and the second is 25% almonds.
   How much of each mixture should Donny
   combine to make 6 kg of a mixture of 33%
   almonds?