**Practise**

**3.** Solve the equation modelled by each balance scale. Check your solution.

**a)**



**b)**
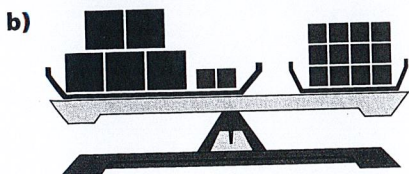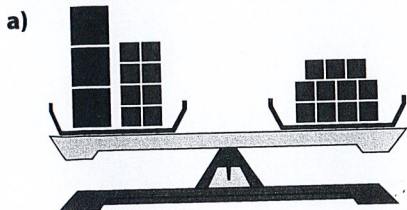


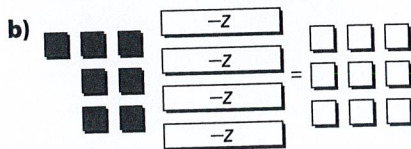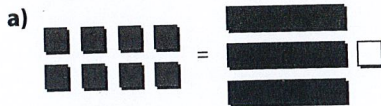**4.** Solve the equation represented by each balance scale. Verify your solution.

**a)**



**b)**
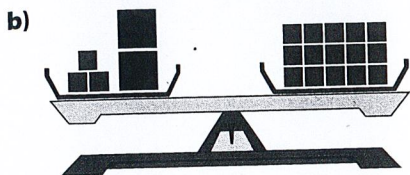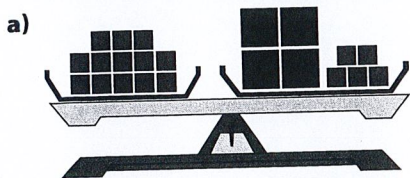
**5.** Solve each equation modelled by the algebra tiles. Check your solution.

**a)**



**b)**
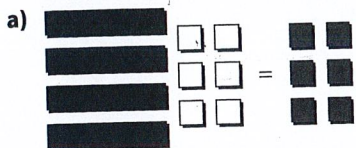


**6.** Solve each equation represented by the algebra tiles. Verify your solution.

**a)**



**b)**

(Solve)

**7.** What is the first operation you should perform to solve each equation?

  **a)** $4r - 2 = 14$

  **b)** $3 - 3x = -9$

  **c)** $-22 = -10 + 2m$

  **d)** $53 = -9k - 1$

**8.** What is the second operation you should perform to solve each equation in #7?

**9.** Solve each equation. Check your answer.

  **a)** $6r + 6 = 18$

  **b)** $4m + 8 = 12$

  **c)** $39 + 9g = 75$

  **d)** $-37 = 8f - 139$

**10.** Solve. Verify your answer.

  **a)** $-17 = 3k + 4$

  **b)** $29 = -14n + 1$

  **c)** $8x - 7 = -31$

  **d)** $-10 = 4n - 12$

*Do a check for each!*

**11.** Show whether $x = -3$ is the solution to each equation.

  **a)** $-8x - 1 = 25$

  **b)** $3 - 7x = -24$

  **c)** $29 = -10x - 1$

  **d)** $30 = 6x + 12$

**12.** Matt is saving $750 to buy a clothes dryer. If he triples the amount he has saved so far, he will have $30 more than he needs. The situation can be modelled as $3s - 30 = 750$, where $s$ represents the amount he has saved so far.

  **a)** Explain how $3s - 30 = 750$ models the situation.

  **b)** How much money has Matt saved so far?

  **c)** What other strategy could you use to determine Matt's savings?

**13.** You are buying lunch at Sandwich Express. The cost is $4 for a sandwich and $2 each for your choice of extras. You have $10. The equation to determine how many extras you can get is $10 = 2e + 4$, where $e$ is the number of extras. How many extras can you buy if you spend all of your money?

**MENU ▌▌▌**

Your choice of extras, only $2 each: salad, fries, milk, juice, jumbo cookie, frozen yogurt.
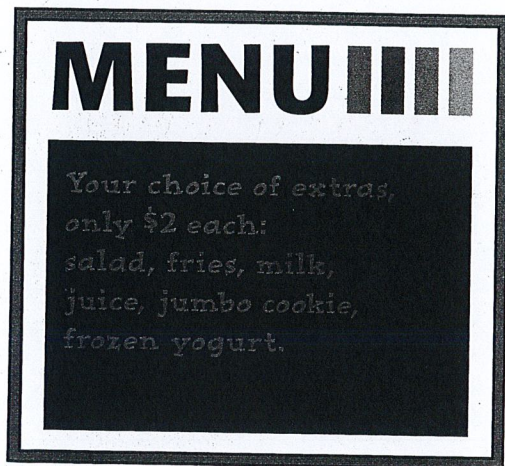
**14.** The percent of elementary school students who choose hockey as their favourite physical activity is 14%. This percent of students is 2% more than four times the percent who choose skiing.

  **a)** Let $s$ represent the percent of students who choose skiing. What equation models this situation?

  **b)** Solve the equation to find the percent of students who choose skiing.

**15.** If Jennifer doubled the money that she has in her account now and then took out $50, she would have enough left in her account to buy a new bike that costs $299. Write and solve an equation to determine how much money Jennifer has now.

**16.** A classroom's length is 3 m less than two times its width. The classroom has a length of 9 m. Write and solve an equation to determine the width of the classroom.

**17.** An eagle is hunting a bird in flight. The eagle begins its descent from a height of 74 m. The eagle reaches its prey at a height of 3 m. This situation can be modelled using the formula $74 = 3 + 6t$, where $t$ represents the time in seconds.
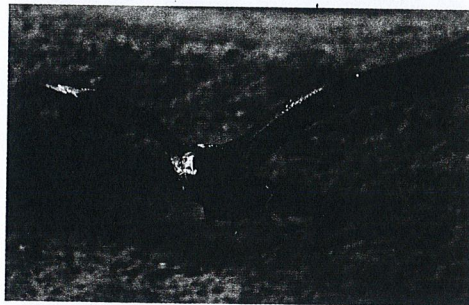
  **a)** What do you think the value of 6 represents in the equation?

  **b)** After how many seconds does the eagle reach its prey? Give your answer to the nearest tenth of a second.