**Grade Level Tasks**

**Outcome PR2**

Model and solve problems using linear equations of the form:  
ax = b = b, a ≠ 0 ax + b = c + b = c, a ≠ 0 a(x + b) = c   
concretely, pictorially and symbolically, where a, b and c are integers.

1. What is the solution to the equation modeled below?

**Legend**

+1 +x

-1 -x

* 1. x = -6
  2. x = -3
  3. x = +3
  4. x = +6

1. Solve the equation using a model. Include a legend.  
     
     
    4x - 3 = 5

1. John solved the equation -2x + 4 = 6 and found x = 1. Verify his solution.

1. For which equation does ***x*** have the greatest value?  
   1. 3x - 4 = 8
   2. - 5 = -7
   3. -6 + 5x = 9
   4. 2 + = 4
2. Using a model, solve 4 – x = 8. Verify your solution and include a legend.

1. Solve the equation - 4 = -16 and verify your solution.

1. Solve  
   1. 5x = -20
   2. = 6
   3. 4x - 5 = 11
   4. + 2 = 6

1. Jamie solved – (2*n* – 1) = 9 and found that *n*=−5. Claudine’s solution to this equation was *n*=−4. Which solution is correct? Explain where the other person erred.
2. Here is how Samantha solved the following equation. Find her mistake and correct it.

4 (x + 1) = 16

4x + 4 = 16

4x +4 +4 = 16 +4

=

x = 5

1. Find and explain the error in the following solution.  
     
    5 + = 11  
    5 - 5 + = 11 - 5  
    = 6  
    x = 3  
     
     
   Find the correct solution and verify.
2. Apply the distributive property to solve 3(2x + 5) = 27.
3. Explain how to apply the distributive property in the expression below  
     
    − (-11 − b + 6)  
     
   If this expression is equivalent to -10, what is the value of b?

1. Solve using the distributive property and verify.  
    4(x + 1) = 16
2. Uncle Joe is three years more than 8 times the age of cousin Bobby. If Uncle Joe is 27 years old, how old is cousin Bobby? Write the equation that corresponds to this problem and solve. Show your thinking.
3. The length of the school’s rectangular playground is 5 metres more than double its width. Its perimeter is 190 metres. If the width if this field is represented by the algebraic variable *w*, write the equation that represents the perimeter and solve for *w*.

1. The admission to the town fair is $5 and it costs $3 per ride. If Joey only has $20, how many rides can he go on? Write the equation that you would use to solve this problem.

1. Deidra has a basket with chocolate eggs. First she gave 10 to her sister, then she shared the rest fairly with her 19 classmates. Each person got 4 eggs. How many were in the basket at the beginning?