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| **Symbolize Problem Situations**

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| **Five Steps for Problem Solving**1. *Familiarize* yourself with the problem situation.2. *Translate* the problem to an expression.3. *Solve* the expression.4. *Check* the answer in the original problem.5. *State* the answer to the problem clearly.  |

This lesson concentrates on ***Familiarizing*** ourselves with the problem and ***Translating*** the word problem into an expression.**Example 1:** Josh wants to buy a bicycle priced at $127.95, but Josh only has $86.42. How much more money does Josh need to be able to buy the bicycle?*Familiarize*. Josh needs $127.95, but he only has $86.42. We need to find the difference.*Translate*. $127.95 - $86.42 = Amount Needed**Example 2:** During the softball season, Sarah hit 23 home runs out of 92 times at bat. What percentage of times at bat did Sarah hit a home run? *Familiarize*. Sarah went to bat 92 during the softball season and hit 23 home runs. Write this as a percentage.*Translate*.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| # of home runs |  |  |  |  |  | 23 |
|  | × | 100 |  | = |  |  | × | 100 |
| # of times at bat |  |  |  |  |  | 92 |  |  |

**Example 3:** The sum of three consecutive integers 255. Find the three integers.*Familiarize*. We are looking for 3 consecutive integers that add together to get 255.*Translate*. Let *n* represent the first integer. Then *n*+1 is the second integer and *n*+2 is the third integer. Now add them together and set equal to 255. *n* + (*n*+1) + (*n*+2) = 3*n* + 3 = 255 |

**Symbolize Problem Situations**

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| A solution to a realistic situation can be found by modeling the situation with an equation. Similar situations are usually modeled with similar equations. Thus, if given an equation we should be able to describe a realistic situation.  |

Remember, many situations can be described by this equation, we just need one.

**Example 1:** Find a situation that fits the equation

**z** = 12 × **j**.

Situation: **z** is the total number of eggs in **j** cartons.

**Example 2:** Find a situation that fits the equation

**y** = 1.25**x** + 8.

Situation: Admission to the State Fair is $8.00 and it cost $1.25 for each ride. **y** is the total cost of going to the fair and riding **x** rides.

**Example 3:** Find a situation that fits the equation

**y** = 1/2 **bh**

Situation: **y** is the area of a triangle with base **b** and height **h**.