1.3 Building Models with Diagrams, Tables, and Equations

Chapter 1: Basic Problem Solving and Mathematical Modeling

Name: _____ Date: _____ Class/Period: _____

Problem 1.27 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A school collects 145 cans in one week and 183 cans the next week. The cans are packed equally into 8 boxes. How many cans go in each box?

Problem 1.28 Directions:
For each problem, create a useful diagram, table, or equation before solving.

Liam has 42 game cards. Ava has 15 more cards than Liam. How many cards do they have altogether?

Problem 1.29 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A theater has 16 rows with 20 seats in each row. Another section has 85 seats. How many seats are there altogether?

Problem 1.30 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A store receives 7 cartons with 36 bottles in each carton and 4 cartons with 28 bottles in each carton. How many bottles arrive?

Problem 1.31 Directions:
For each problem, create a useful diagram, table, or equation before solving.

Team A scores 68 points. Team B scores 17 fewer points. What is the combined score?

Problem 1.32 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A library places 96 fiction books and 72 nonfiction books equally on 6 shelves. How many books go on each shelf?

Problem 1.33 Directions:
For each problem, create a useful diagram, table, or equation before solving.

Plan A uses 9 buses with 40 seats each. Plan B uses 12 vans with 28 seats each. Which plan provides more seats, and how many more?

Problem 1.34 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A camp has 8 cabins with 14 campers each and 6 cabins with 12 campers each. How many campers are there?

Problem 1.35 Directions:
For each problem, create a useful diagram, table, or equation before solving.

Noah has 75 marbles. Priya has 24 fewer marbles than Noah. They divide all their marbles equally into 9 bags. How many marbles go in each bag?

Problem 1.36 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A warehouse loads 5 trucks with 48 boxes each and 3 trucks with 36 boxes each. How many boxes are loaded?

Problem 1.37 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A rectangular display uses 12 rows of 18 tiles. Then 36 tiles are removed. How many tiles remain?

Problem 1.38 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A school has 224 sixth graders and 196 seventh graders. The students form teams of 14. How many teams are formed?

Problem 1.39 Directions:
For each problem, create a useful diagram, table, or equation before solving.

A camp is organizing campers into activity groups.

- Five cabins have 16 campers each.
- Four cabins have 14 campers each.
- All campers will be divided equally among 8 activity groups.

Part A. Create a labeled mathematical model for the situation. You may use a tape diagram, a table, equations, or a combination.
Part B. Use the model to determine the number of campers in each activity group.
Part C. Explain how each part of your model connects to the information in the problem.