Making Sense of Division Problems

You know that a divisor won't always go into a dividend evenly; and when that happens, you're left with a remainder. That "remaining" amount represents a part of the whole. But what exactly does this mean?

Sometimes, for your solution to make sense, you cannot include the remainder. In these cases, you must round your quotient up or down to the nearest whole number.

Examples:

Mickey is making bows for Minnie. Each bow needs 7 in of ribbon. If he has 15 in of ribbon, how many bows can he make?	Goofy's favorite ride holds 7 kids at a time. If 15 kids are in line, how many times will the ride have to go for everyone in line to have a turn?
a) Divide: $7 \overline{)15}$	a) Divide: $7 \overline{)15}$
b) Draw a picture:	b) Draw a picture:
c) What does the remainder represent?	c) What does the remainder represent?
d) Will you have to round your final answer up or down? (Will your remainder be included in your final answer?) Explain.	d) Will you have to round your final answer up or down? (Will your remainder be included in your final answer?) Explain.
e) How many bows can Mickey make?	e) How many times does the ride have to go for everyone to have a turn?

Interpreting Remainders

Round UP when the remainder must be included in the solution.

Round DOWN when the solution must include whole pieces, and it does not make sense to include the remainder.

Would you round up or down? Circle UP or DOWN for each scenario.

UP   DOWN   How many buses are needed to transport students?

UP   DOWN   How many times can I listen to my favorite song (start to finish) in 1 hour?

UP   DOWN   How many packs of gum can I buy with $5?

UP   DOWN   How many shelves are needed to hold a class set of workbooks?

Solve each problem. Circle A, B, C, or D to indicate the best way to interpret each remainder. Each choice will be used once.

A Round down to the whole number.	**B** Round up to the next whole number.
C Use a mixed number.	**D** Use a decimal.

1) Ariana charges an hourly rate for babysitting. Last month, she made $81 for 12 hours of babysitting. How much does she make per hour?

   Circle one: **A   B   C   D**

   Solution: _____

2) A group of 427 people are going on a field trip. Each bus can hold 40 people. How many buses are needed to take everyone on the trip?

   Circle one: **A   B   C   D**

   Solution: _____

3) Kevin and his sisters picked 105 pounds of grapes to sell at a local farmer's market. They split the grapes evenly into 30 bags. How many pounds of grapes were in each bag?

   Circle one: **A   B   C   D**

   Solution: _____

4) Mr. Hernandez owns a Game Stop. Each PS2 game takes up a width of 25 mm. If one shelf is 860 mm wide, how many games can Mr. Hernandez fit on the shelf?

   Circle one: **A   B   C   D**

   Solution: _____

1) **HOMEWORK** Lisa solved 448 math problems for homework over 28 days. If she solved the same number of problems each day, how many problems did she solve per day?

2) **AT HOME** Meg has a new bookcase for her bedroom with 6 shelves. Each shelf holds 8 books. If Meg has 50 books, how many books will not fit on the bookcase?

3) **MEALS** Sandra helped serve meals to 25 families. Each family received the same amount of food. If she served 275 pounds of food, how many pounds of food did each family receive?

4) **BATTERIES** A teacher bought a package of 17 batteries to put in her calculators. Each calculator uses 3 batteries. How many calculators can the teacher fill with batteries?

5) **FOOTBALL** The football team is raising money to have a new turf field installed. The cost of the turf field is $48,780. The team has 18 months to raise the money. How much do they need to raise each month?

6) **WINDOWS** A window washing company has a contract to wash 3,082 windows on a 23-story building. If there are the same number of windows on each floor, how many windows are there on each floor?

7) **SCHOOL** There are 32 students in a math class. Each table in the classroom seats 6 students. How many tables will be needed to seat all of the students?

8) **DELIVERIES** Mr. Thomas is delivering bricks to a construction site. His truck holds 387 bricks at one time. The builder has ordered 2,800 bricks. How many trips will Mr. Thomas have to make to deliver all the bricks?