Model 1 The % Operator

9 / 4	*evaluates to*	2
10 / 4	*evaluates to*	2
11 / 4	*evaluates to*	2
12 / 4	*evaluates to*	3
13 / 4	*evaluates to*	3
14 / 4	*evaluates to*	3
15 / 4	*evaluates to*	3
16 / 4	*evaluates to*	4

9 % 4	*evaluates to*	1
10 % 4	*evaluates to*	2
11 % 4	*evaluates to*	3
12 % 4	*evaluates to*	0
13 % 4	*evaluates to*	1
14 % 4	*evaluates to*	2
15 % 4	*evaluates to*	3
16 % 4	*evaluates to*	0

Questions (12 min) Start time:

1. Which numbers % 4 evaluate to 0 in the table above? If the table were extended to include more rows, which other numbers % 4 would evaluate to 0?

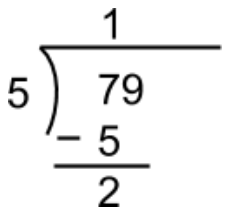
2. Look at the expressions in the second table that evaluate to 1. How do the left operands in these expressions (9, 13, 17) differ from those that evaluate to 0?

3. List three numbers % 5 that will evaluate to 0 and three numbers % 5 that will evaluate to 2.

4. Evaluate the following Java expressions:

18 % 4 19 % 4 19 % 5 19 % 6

5. Consider how you were taught to do long division in elementary school. Finish solving for $79 \div 5$. What is the answer?



6. Imagine that you are given candy mints to divide evenly among your team members.

a) If your team receives 11 mints, how many mints are left over?

b) If your team receives 2 mints, how many mints are left over?

7. Describe what the % operator does. How are the / and % operators related?

8. Would it make sense to apply the % operator to real numbers? Why or why not?