

Working with Remainders

Answer Sheet

Use modular arithmetic to solve these problems. Answer the following questions, using the activity to check your work:

1. If my birthday was on a Tuesday last year, and this year is not a leap year, what day of the week will my birthday be on this year?

Set the clock size to 7 (the number of days in a week)
Set the starting time to 3 (because Tuesday is the third day of the week)
Set the elapsed time to 365 (for the number of days in the year)
Answer is: **Wednesday** (shown by a 4 on the clock)

2. I had 34 cookies that I divided evenly among 4 friends. I ate the leftover cookies. How many cookies did I eat?

Set the clock size to 4 (the number of friends you are dividing by)
Set the starting time to 0
Set the elapsed time to 34
Answer: **4 remaining cookies**

3. I bought as many pencils as I could at 25 cents each and spent the rest of my money on stickers which cost 2 cents each. In all, I spent \$1.60 before tax. How many stickers did I buy?

Set the clock size to 25 (the price of one pencil)
Set the starting time to 0
Set the elapsed time to 160
Divide the remaining money (\$0.10) by 2 (the price of each pencil)
Answer: **5 stickers**

4. Using a regular deck of 52 cards, I dealt all the cards in the deck to Max, Keisha, and myself for a game of war. Were the cards dealt evenly?

Set the clock size to 3
Set the starting time to 0
Set the elapsed time to 52
Answer: **No** because there would be one card leftover

5. A gallon of milk is 16 cups, and one pudding recipe uses 3 cups. I have 2 gallons of milk and want to make 10 recipes of pudding with at least 1 cup left to drink. Is this possible?

Set the clock size to 3

Set the start time to 0

Set the elapsed time to 32 (16 cups times 2 gallons)

Answer: **Yes**, because there would be 2 cups leftover.

6. Summer camp starts on a Monday and lasts for 44 days. One what day will it end?

Set the clock size to 7

Set the start time to 2

Set the elapsed time to 44

Answer: **Wednesday** (represented by a 4)