

**Class Notes & Assignment**  
*Using Modular Arithmetic to Predict the Future*

**JOE'S DINER**

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Remember Joe's Diner? Well this has become your favorite lunch spot because the food is soooo good! In fact, you have made it a point to bring clients to Joe's Diner for lunchtime meetings. Joe has 4 different lunch specials (see chart below) that he offers on a continuously rotating basis (i.e. special #1, special #2, special #3, special #4, special #1, special #2, special #3, etc.). Joe begins every year with special #1 – so every January 1<sup>st</sup> special #1 is offered. Joe is also a workhorse and has decided to never close his doors meaning that his restaurant is open every day of every year. Below is a listing of the specials.

<b>Special #1:</b> Garden Salad, Baked Ham, Green Beans & Mashed Potatoes
<b>Special #2:</b> Ceasar Salad, Pineapple Chicken, Carrots & Snow Peas
<b>Special #3:</b> Garden Salad, Savory Meatloaf, Asparagus & Garlic New Potatoes
<b>Special #4:</b> Ceasar Salad, Pine Nut Salmon, Rice Pilaf & Broccoli

**Situations**

What will be the special offered on February 3<sup>rd</sup>?

What kind of salad will be included on the special for February 9<sup>th</sup>?

You have a lunch meeting with a new client on March 25<sup>th</sup> and want to take the client to Joe's for a business lunch. However, you have found out that your new client is following a strict Atkins Diet – no carbs! Will you be able to offer one of Joe's oh so tasty specials to your client or should you reschedule your lunch meeting date?

## FASHION SENSIBILITIES

Robb has decided to introduce some method into his madness about his clothing – especially in his choice of footwear, pants, and T-shirts. He made a list (see the adjacent chart) of the clothes he decided to wear. On September 1 he wore his running shoes, a red T-shirt, and jeans. The next day he replaced each item with the item below it on his list. Thus on September 2 he wore sandals, a blue T-shirt, and cargo pants. When he reached the bottom of one column, he started again at the top.

Footwear	T-Shirts	Pants
Running Shoes	Red	Jeans
Sandals	Blue	Cargo Pants
	Green	Shorts
	Yellow	
	White	

What should Robb be wearing on September 21<sup>st</sup> ?

What should Robb be wearing on September 30<sup>th</sup> ?

On which day(s) in September should Robb be wearing sandals, a red T-shirt, and shorts?

On which day(s) in October should Robb be wearing running shoes, a white T-shirt, and jeans?

Will Robb be able to wear a different outfit for every day in September? Explain your answer.