

Week #1 Winter 2024



Problem

of the Week

Solution



You have set a password for your bank account by randomly selecting a combination of letters and numbers. The password is 10 digits long. Unfortunately, you cannot remember the password and plan to attempt different possibilities until you get the right one (there are unlimited attempts at your bank). If you are able to attempt a new password every 5 seconds and you attempt your first password at 12:00:00pm on 1/23/2024, on what date and at what time will you finally get into your account?

Solution: 4:48pm 10/17/579297267

Week #2 Winter 2024



Problem

of the Week

Solution



Henry won a contest that entitles him to a free pizza every week for 10 years. Every Sunday at 6:00pm he receives another large pizza. Each pizza contains 10 slices. He heats one piece for lunch every day and stores the remainder in his freezer. His freezer can hold 15 pizzas worth of pizza. He plans to purchase an extra freezer to hold more pizza when he surpasses the space allowed in his current freezer. Once ordered, the freezer will take 2 days to get to Henry's house. On what day should Henry order his new freezer if he wants it to make it to his house in time to hold the extra pizza if he starts receiving pizza this Sunday 2/3/2024?

Solution: 12/26/2024

Week #3 Winter 2024



Problem

of the Week

Solution

A UPS driver stops at a house to drop off a package. He asks the woman who lives there how many children she has. "Three," she says. "And I bet you can't guess their ages." "Ok, give me a hint," the driver says. "Well, if you multiply their ages together, you get 36," she says. "And if you add their ages together, the sum is equal to our house number." The driver looks at the house number nailed to the front of her house. "I need another hint," he says. The woman thinks for a moment. "My youngest daughter will have a lot to learn from her older sisters," she says. The deliveryman's eyes light up and he tells her the ages of her three children. What are their ages?

Solution: 1, 6, 6

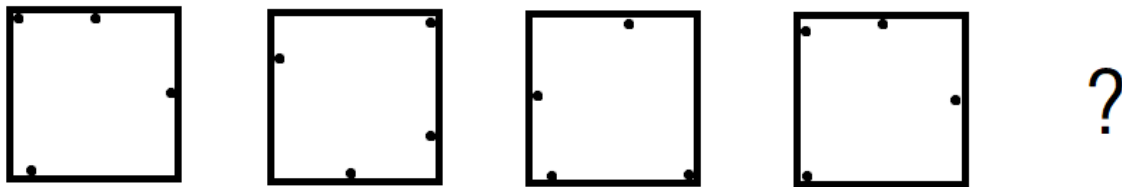
Week #4 Winter 2024



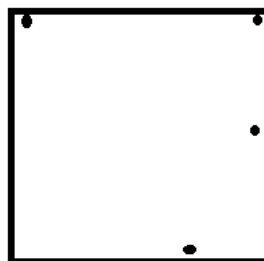
Problem

of the Week

Solution



What is the next image?



Solution:

Week #5 Winter 2024



Problem

of the Week

Solution



You have two one-hour fuses: lighting one end of a fuse will cause it to burn down to the other end in exactly one hour's time. You know nothing else about the fuses; in particular you don't know how long any segment of a fuse will burn, only that an entire fuse takes one hour. How can you tell when exactly 45 minutes have passed?

Solution: light one of the fuses on both ends and the other fuse on one end. The first fuse will go out in 30 minutes. At that time, light the second end of the second fuse and it will go out in 15 additional minutes.

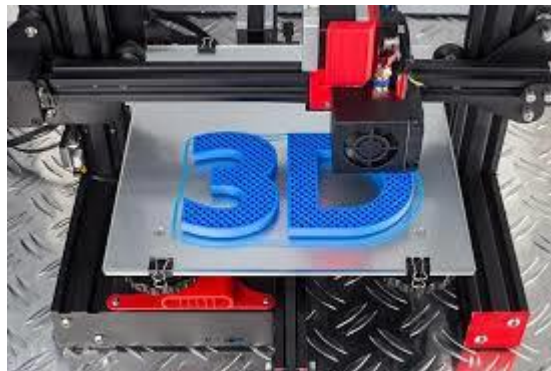
Week #6 Winter 2024



Problem

of the Week

Solution



Your boss, Mr. Mynchanjer would like you to print a 3d model of the office building. You start the day by preparing a model that uses .23 kilograms of filament. Happy with the results, you show it to your boss. Mr. Mynchanjer tells you that he is not satisfied with the size of his office in the model. He would like the area of the floor of his office to be twice as large (for example, if the floor of his office in your model is 3 square inches, he is requesting you make a model that has his office floor be 6 square inches). You make your second model and show it to your boss. “This is much too large” he says. “In this model, the door is too tall, make it again, but make the door $\frac{2}{3}$ as tall as you have it here.” You make a third model, and Mr. Mynchanjer is still not satisfied. He feels that this model requires too much filament. “I would like you to use half as much filament in the final model, that you did in the most recent model.” This final model is satisfactory. How much filament did you use altogether today (assume all models are proportional to the real office building)?

Solution: 1.15 kg

Week #7 Winter 2024



Problem

of the Week

Solution

			8	1				
							4	3
5								
				7		8		
						1		
	2			3				
6							7	5
		3	4					
			2			6		

2	3	7	8	4	1	5	6	9
1	8	6	7	9	5	2	4	3
5	9	4	3	2	6	7	1	8
3	1	5	6	7	4	8	9	2
4	6	9	5	8	2	1	3	7
7	2	8	1	3	9	4	5	6
6	4	2	9	1	8	3	7	5
8	5	3	4	6	7	9	2	1
9	7	1	2	5	3	6	8	4

Solve this sudoku puzzle.

Solution: see the puzzle above.

Week #8 Winter 2024



Problem

of the Week

Solution



A vendor can place 16 large boxes or 20 small boxes into a carton for shipping. In one shipment, she sent a total of 182 boxes. If there are more large boxes than small boxes, how many cartons did she ship?

Solution: This is impossible!

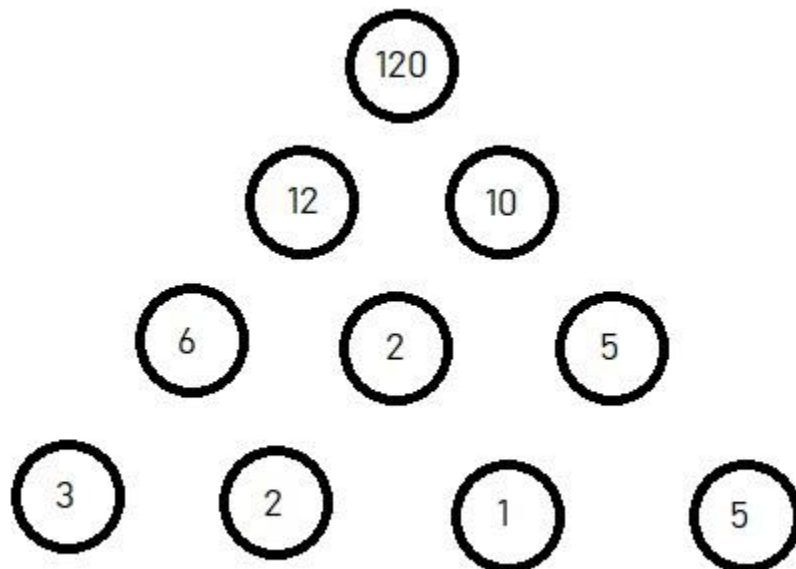
Week #9 Winter 2024



Problem

of the Week

Solution



Week #10 Winter 2024



Problem

of the Week

Solution



I am thinking of a pair of integers with the property that their sum is half their product. Give the pair whose sum is the smallest, that has this property.

Solution: -2 and 1