

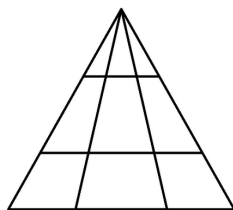
**Answer Sheet for Student Name:** \_\_\_\_\_

#	Answer	Points (0/1)
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Total:

## Problems

1. The ! symbol in math means factorial. For example,  $4! = 4 \times 3 \times 2 \times 1$  and  $3! = 3 \times 2 \times 1$ . What is the value of  $6!$ ?
2. The sum of the digits in the year 2024 is  $2 + 0 + 2 + 4 = 8$ . What is the next year where the sum of the digits of the year is 8?
3. There is a pizza with 10 slices, 3 of which have artichoke hearts. Ben doesn't like artichoke hearts, but wants 2 slices of pizza. What is the probability that if he randomly picks 2 slices from the pizza, he doesn't get any slices with artichoke hearts?
4. palindrome is a number that reads the same forwards and backwards. An example of a palindrome is 1001 or 242. Find the biggest palindrome less than 1001 that is a multiple of 11.
5. The first 20 odd numbers are written. How many times does the digit "3" appear?
6. Ellie and Tessie are having a race. However, Ellie knows Tessie is slower and lets her have a head start. Tessie starts running 2 minutes before Ellie does. If Tessie runs at a rate of 4 meters per second and Ellie runs at a rate of 6 meters per second, how long will it take for Ellie to catch up to Tessie?
7. Iris opens up her favorite book to a random page and realizes that the product of the two page numbers she sees is 12. What is the smaller page number that she sees?
8. How many triangles of any size are in this diagram?



9. Andrew, Brian, Daniel, and Grace are part of either the green team or the red team. Members of the green team always tell the truth and the members of the red team always lie. The four of them each make a statement shown below. There is only one person on the green team. Who is it?

Andrew: "I'm the person on the green team."  
Brian: "Andrew is the person on the green team."  
Daniel: "Andrew and Brian are on the red team."  
Grace: "Everybody is on the green team."
10. Henry has taken 5 tests where he has scored 3 more points on each test than he did on the previous test. His 5th test score was 76. After he takes a 6th test, the new average of his scores is 60. What did he score on the 6th test?

**Solutions**

1. 720
2. 2033
3.  $\frac{7}{15}$
4. 979
5. 8
6. 4 minutes
7. 25
8. 18
9. Daniel
10. 10