$$B > \frac{1}{n}\sum_{i=1}^{n} x_i$$

(Be greater than average)

Algebra – 6th Grade

1. **2 points:** At a school assembly, the principal asked all of the students to stand up. He then told the 9th graders to sit down, so half of the students sat down. Next, he asked the math club students to sit down, so an additional 42 students sat down. Finally, he asked all of the boys to sit down. One-third of the remaining students sat down. Given that 200 students were still standing, how many students were at the assembly?

2. **2 points:** During a fundraiser, 360 people visited a bake sale. 20% of them paid $0.25, 15% paid $0.75, 50% paid $1.00, and the rest paid an average of $3.25. How much money, in dollars, did the fundraiser raise?

3. **2 points:** One 2-ounce serving of Skittles has 231 calories. Suppose that a certain football player needs 2000 calories of Skittles per day in order to succeed on the field. If each large bag contains 14 ounces of Skittles, how many large bags would he need each day? **Express your answer to the nearest tenth.**

4. **3 points:** At the student store, protractors are being sold for $3 each and calculators for $8 each. On the day of the final semester exam, 35 items are sold, totaling in $160 of sales. How many protractors were sold?

5. **3 points:** If you ride your bike at an average speed of 20 miles per hour for 45 minutes, and then run at an average speed of 6 miles per hour for 30 minutes, what was your average overall speed in miles per hour? **Express your answer as a decimal.**

6. **3 points:** Moe and Curly are driving directly towards each other at distinct constant speeds, initially 1000 yards apart. If Moe is driving at 30 miles per hour and Curly is driving 45 miles per hour, how many yards will Curly have traveled when they finally crash into each other?

7. **3 points:** What is the positive difference between the sum of the first 50 positive odd integers and the sum of the first 49 positive even integers?

8. **4 points:** The difference between a number cubed and 9 times that number is 0. What is the greatest possible value of that number?

9. **4 points:** Suppose that $1 is put into each of 50 boxes sitting on a table. The first person goes through and doubles the current amount in every other box. The second person goes through and doubles the current amount in every third box. Finally, the third person goes through and triples the current amount in every tenth box. If you were to collect all the money from all 50 boxes, how many dollars would you have?

10. **4 points:** In order to rent a bus for an exciting field trip to "The Pi Factory", 28 kids each had to pay an equal amount to cover the cost. If 7 more kids would have gone, each of the 28 kids would have had to pay $5 less. How much money, in dollars, does it cost to rent the bus?