The next set of medium/hard DS questions. I'll post OA's with detailed explanations after some discussion. Please, post your solutions along with the answers.

1. What is the product of three consecutive integers?

(1) At least one of the integers is positive
(2) The sum of the integers is less than 6

2. If x and y are both positive integers and x>y, what the remainder when x is divided by y?

(1) y is a two-digit prime number
(2) x=qy+9, for some positive integer q

3. The length of the median BD in triangle ABC is 12 centimeters, what is the length of side AC?

(1) ABC is an isosceles triangle
(2) AC^2 = AB^2 + BC^2

4. Two machines, A and B, each working at a constant rate, can complete a certain task working together in 6 days. In how many days, working alone, can machine A complete the task?

(1) The average time A and B can complete the task working alone is 12.5 days.
(2) It would take machine A 5 more days to complete the task alone than it would take for machine B to complete the task

5. Set A={3-2x, 3-x, 3, 3+x, 3+2x}, where x is an integer. Is the standard deviation of set A more than the standard deviation of set B={3-2x, 3-x, 3, 3+x, 3+2x, y}

(1) The standard deviation of set A is positive
(2) y=3

6. The ratio of the number of employees of three companies X, Y and Z is 3:4:8, respectively. Is the average age of all employees in these companies less than 40 years?

(1) The total age of all the employees in these companies is 600
(2) The average age of employees in X, Y, and Z, is 40, 20, and 50, respectively.

7. Was the average (arithmetic mean) temperature in city A in March less than the average (arithmetic mean) temperature in city B in March?

(1) The median temperature in City A in March was less than the median temperature in city B
(2) The ratio of the average temperatures in A and B in March was 3 to 4, respectively

8. Two marbles are drawn from a jar with 10 marbles. If all marbles are either red of blue, is the probability that both marbles selected will be red greater than 3/5?

(1) The probability that both marbles selected will be blue is less than 1/10
(2) At least 60% of the marbles in the jar are red

9. If x is an integer, is x^2>2x?

(1) x is a prime number.
(2) x^2 is a multiple of 9.

10. What is the value of the media of set A?

(1) No number in set A is less than the average (arithmetic mean) of set A.
(2) The average (arithmetic mean) of set A is equal to the range of set A.