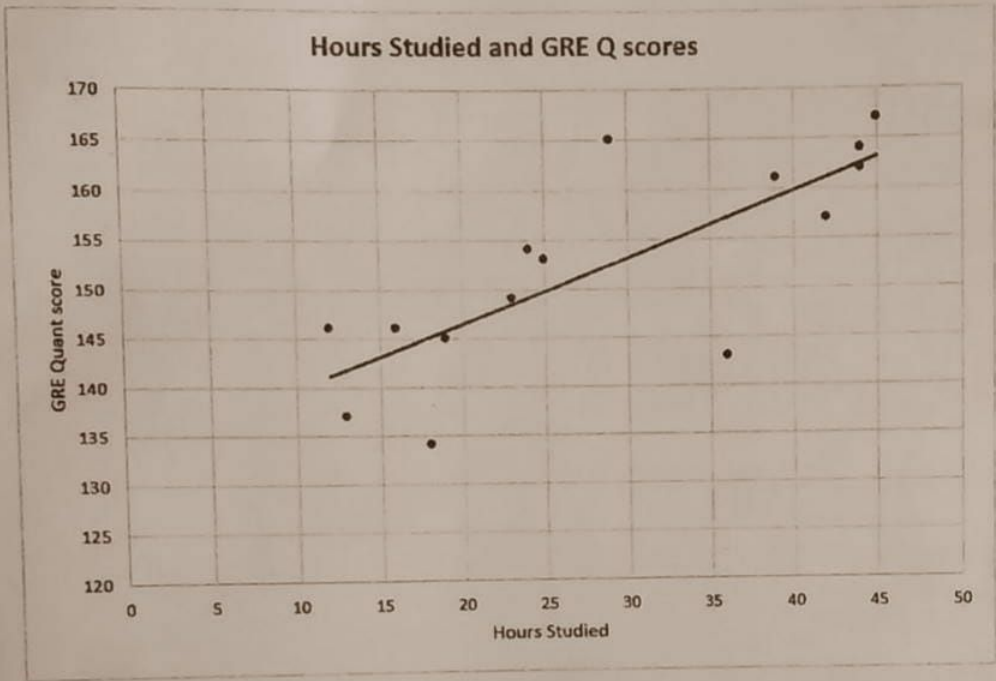


Instruction: Answer all the questions in the order they are laid out on the question paper

1. Fifteen college seniors, none of whom took any math classes in college, were selected for a clinical trial. An online GRE Math Course was made available to them, and these students were allowed to study for however many hours they wanted. Then, each took the GRE for their first time. The graph below records how many hours each student studied, using the online material, and that student's GRE Quant score. The best-fit line model shows the best prediction, given such a student's hours of study, of what her GRE Q score might be.



Handwritten calculations:

$$\begin{array}{r} 39 \frac{1}{3} \\ 8 \overline{) 312} \\ \underline{24} \\ 72 \\ \underline{72} \\ 0 \end{array}$$

$$\begin{array}{r} 27 \\ 28 \overline{) 756} \\ \underline{56} \\ 196 \\ \underline{196} \\ 0 \end{array}$$

- A. Among the students in this trial who studied less than 25 hours, what is the highest GRE Quant score achieved? (5)
- B. For the students in this trial with the three highest scores, approximately what is the average number of hours they spend studying? (5)
- C. Among the students in this trial who studied for 20 hours or more, what fraction of them performed worse than expected, according to the best-fit line model? Express your answer as a fraction. (10)

2. Many people believe that women make better parents than men and that this is why they have the greater role in raising children in most societies. Others claim that men are just as good as women at parenting. Write an essay expressing your point of view. You should write approximately 250 words. Use your ideas, knowledge, and experience and support your arguments with examples and with relevant evidences. www.prebd.com (25)

3. Assume that you are a bank manager and one of your borrowers has failed to repay his/her last couple of installments. Write a letter to that client for repayment of the loan. (15)

4. **Translate the following into English:**

বীতিমতো রেকর্ড ভাঙার খেলায় মেতেছে দেশের পুঁজিবাজার। সূচকের মান আজ সাম্প্রতিক রেকর্ড ছাড়িয়ে যাচ্ছে তো কাল সেটিও পেছনে পড়ে যাচ্ছে - এমন ধারাই চলছে গত কিছুদিন হলো। গতকালও শেয়ার সূচকে বড় উত্থান দেখা গেছে। ২ দশমিক ৪৯ শতাংশ উত্থান নিয়ে ঢাকা স্টক এক্সচেঞ্জের (ডিএসই) প্রধান সূচক ডিএসইএক্স জোরগতিতে ৬ হাজার পয়েন্টের দিকে এগিয়ে চলেছে। দেশের আরেক পুঁজিবাজার চট্টগ্রাম স্টক এক্সচেঞ্জের (সিএসই) প্রধান সূচক সিএসসিএক্সও গতকাল বড় উত্থান দেখেছে। এদিন সূচকটি বেড়েছে ২ দশমিক ৫৩ শতাংশ। (20)

5. A certain business produced x rakes each month from November through February and shipped $x/2$ rakes at the beginning of each month from March through October. The business paid no storage costs for the rakes from November through February, but it paid storage costs of \$0.10 per rake each month from March through October for the rakes that had not been shipped. In terms of x , what was the total storage cost, in dollars, that the business paid for the rakes for the 12 months from November through October? (10)

6. A rectangular box that is 7 inches long by 4 inches wide by 3 inches deep is carefully packed to hold the maximum number of blocks that are 1 inch by 1 inch by 2 inches. How many blocks can be packed into the box? (10)