IntelliChoice 2020 SAT Camp: Math

Chirag Gokani

Summer 2020

E-mail: Chirag.Gokani@utdallas.edu
Course Dates: June 1st — Friday, July 31st
Class Hours: Monday-Thursday 10:00am-11:00am
Office Hours: Friday 10:00am-2:00pm
Course Resources: **https://cag170030.github.io/tutoring/**
Class Room: *via* Zoom

Tutors:

Christian Kondor
E-mail: Christian.Kondor@utdallas.edu
Office Hours: TBD *via* Zoom

Patricia Mathu
E-mail: Patricia.Mathu@utdallas.edu
Office Hours: TBD *via* Zoom

Annika Russell
E-mail: Annika.Russell@utdallas.edu
Office Hours: TBD *via* Zoom

Course Description

The 2020 IntelliChoice SAT Camp is a virtual, 9-week course that guides students through the all they need to know to score highly on the SAT. This course will focus on the mathematics portion of the SAT. (A course led by Pratik Koppikar will cover the reading/writing portion of the SAT—see the other syllabus). Both courses are completely free-of-charge; students must simply register online at **https://account.intellichoice.org/create**.

The curriculum of the math course aligns directly with the topics covered on the SAT Math Section:

1. Heart of *Algebra*: 33%

   Understanding linear *algebra*

Using linear *equations* & *inequalities* to represent relationships

Using *graphs* of linear functions to solve problems

2. Problem Solving and Data Analysis: 29%

   Using proportional relationships, percentages, and units (understanding $ax = b$)

   Representing qualitative data (i.e., word problems)

   Using *probabilities* (boils down to *algebra* problems) in context

3. Passport to Advanced Math: 28%

   Identifying & creating *algebraic expressions*

   Solving & understanding nonlinear equations (boils down to *linear algebra*)

   Creating and graphing quadratic, exponential, and other nonlinear equations

You can see the *italicized* words above involve *algebra*. This course will therefore spend a significant amount of time refining and strengthening students' algebra skills. Please see the **Schedule and weekly learning goals** section for a full description of the topics covered in the course.

Required Materials

- Pencil or pen (preferably different colors)
- Scrap paper
- Reliable internet access via computer, tablet mobile device
- **Zoom** installed on computer/mobile device
- Email address for all communication with course instructor

Prerequisites

This course is designed for students who will be in high school (grades 9-12) in the fall 2020/spring 2021 academic year.

Students will be expected to have a some basic background in geometry, algebra, and trigonometry, but sufficient review will be provided as topics are introduced, so students who struggle in these areas will not be left behind.

Course Structure

Class Structure

Class begins promptly at 10:00 a.m. from Monday–Thursday, starting June 1st, and ending July 31st. Class ends at 11:00 a.m., though students may stick around to ask lingering questions.

The lecture format will begin with a brief review of previously taught concepts and will then start covering the material covered on the SAT. Students will be exposed to “semi-formal" treatments of mathematical concepts, which will immediately be followed by example problems directly taken from the SAT. The course relies on student participation. Students will be asked to answer questions at random.

If students are struggling with homework or topics discussed in the lecture, they are highly encouraged to attend office hours, which are held on Fridays from 10:00–2:00 p.m.

Homework

Weekly homework is assigned on Monday and is due by Friday at 9:00 p.m. Homework assignments should be emailed to `Chirag.Gokani@utdallas.edu`. This course relies on students attempting the homework to the best of their ability.

Grading Policy

Homework is graded by the tutor assigned to each student. Students are to email the tutors a clear picture or scan of their homework on Fridays by 9:00 p.m. Tutors will provide feedback on the students’ work. If students fail to complete the homework in a timely manner, they will not learn anything.

Course Policies

Please attend all Monday–Thursday lectures. These are the three ‘P’s: be patient, positive, and persistent. Other than this, be respectful. Perfect attendance will be rewarded, so you should try to attend all lectures if possible.

Schedule and weekly learning goals

Week 01, 06/01 - 06/05: Algebra basics, $y = mx + b$, inequalities, absolute value

Week 02, 06/08 - 06/12: Proportions and dimensional analysis

Week 03, 06/15 - 06/19: Quadratics: $y = mx^2 + bx + c$

Week 04, 06/22 - 06/26: Exponents, logarithms

Week 05, 06/29 - 07/03: Graphing

Week 06, 07/06 - 07/10: Trigonometry

Week 07, 07/13 - 07/17: Geometry

Week 08, 07/20 - 07/24: Probability, complex numbers

Week 09, 07/27 - 07/31: Review

About the Instructor

Chirag Gokani is a senior studying physics as a McDermott Scholar at the University of Texas at Dallas. He has received extensive training in mathematics and is skilled at teaching difficult concepts to high-school and college-age students. He is a teaching assistant for the UTD Physics Department and has tutored hundreds of students the past three years. He has also co-taught the SAT Camp for the past two years. Chirag received a near-perfect score on the math section of the SAT and received an 800 on the Math II Subject Test. He knows the ins and outs of the SAT test and is excited to share these tips with IntelliChoice students.