

What is the highest bit rate that the Vex can communicate through the serial port?

What are the bit rates for a single stream of 802.11 (Wi-Fi) versions b, g, and n?

What is the command to program the file "firmware.hex" to the Vex under Linux?

What has the greatest effect on the accuracy of GPS determination?

How many GPS satellites are required to determine position in three-space?

How many GPS satellites are usually required to determine position in three-space if the position is known to be on the surface of the earth?

How much RAM does the Vex with the PIC18 processor (the one used in class) have?

How do Bluetooth devices avoid communicating on the same frequency as other devices?

What is the name of a common reverse-engineered Android operating system?

What programming language is most commonly used to program the Vex robots?

1. What algorithm is commonly used to optimize navigation?
2. Which Android API is used for GPS services?
3. What range of values does the Vex use for speed/velocity?
4. What is the IEEE 802.11 for?
5. In Android Development, what is the name given to application components that users will interact with on the app's screen?
6. What is a fragment (Android Dev)?
7. What method is used to Initialize an activity in Android Development?
8. Where are all the @string resources stored for use in Android interfaces?
9. Which method is used to initialize the Vex controller in the OpenVex API
10. Which Java package includes Socket and ServerSocket used for communication between Java programs?
1. What are the three steps of the triple handshake TCP protocol?
2. What are the three parts of a GPS signal?
3. What is a baud rate (as in, X/Y, what are X and Y)?
4. Name two other transport layer internet protocols besides TCP.
5. Name three features of the Nexus 7, whether or not they were used, that can be used for the purpose of this class.
6. How many satellites are needed to pinpoint a location on a 1-dimensional line? A 2-dimensional plane? A 3-dimensional space? Why?
7. What does SDCC stand for?
8. What does black look like to the sonic sensor?
9. What standards are there of the IEEE 802.11 protocol (letters)?
10. What does it mean to root a device?
1. What is the password for the MU_Engineer network?
2. What is the default port number that the KnockKnock Server uses?
 - a. 22
 - b. 80
 - c. 4444
 - d. 8080
3. What kind of protocol(s) does Java Socket use?
 - a. HCF
 - b. TCP/UDP

- c. SSH
 - d. HTTPS
4. What is the command to read from the shaft encoder?
 - a. shaft_get(PORT_VALUE)
 - b. encoder.read(PORT_VALUE)
 - c. shaft_encoder.read(PORT_VALUE)
 - d. shaft_encoder_read_std(PORT_VALUE)
 5. Which side or sides of the communication need to know the other sides' IP and why?
 6. Fill in the following quote from Dr. Povinelli: "With any communication, it's really the _____ where things go awry."
(11/15/2012)
 - a. communication
 - b. drivers
 - c. initiation
 - d. society
 7. What is the purpose of AndroidManifest.xml?
 8. What function is called at the beginning of the Android application being run?
 - a. androidBegin()
 - b. androidStart()
 - c. onStart()
 - d. onCreate()
 9. What is the easiest way to enable the developer options in the Android settings menu?
 - a. spin around three times, while holding the tablet
 - b. compile a new kernel where the developer options are enabled
 - c. Tap the "build number" until it says "You are now a developer!"
 - d. throw the tablet on the ground
 10. What is the purpose of rooting a phone or tablet?
1. What is the name of the endpoint of inter-process communication flow across a network?
 2. What is in a socket address?
 3. T/F: Sockets can connect using UDP or TCP.
 4. T/F: Android will let network communication occur in the main thread without modification.
 5. What three items can the accelerometer provide to you?
 6. How many groups tested their robots outside?
 7. T/F: The last three digits of GPS are noise
 8. What dimensions does the accelerometer provide the ability to monitor?
 9. How many GPS satellites are needed for a fix?
 10. Approximately how many GPS satellites are visible from any point on the ground at any time?
1. Who originally created GPS and what year did it become fully functional?
 2. How many satellites did the DoD originally have for GPS?
 3. What CPU does the Nexus 7 run on?
 4. Name two open source programming tools for VEX.
 5. What is the name of the tool used to manipulate flash partitions of the Android developer phone?
 6. How can you tell if you are in fastboot mode?
 7. What was the name given to the first wireless products brought to the market?
 8. What is it referred to when data is transferred one bit at a time?

9. What was the greatest challenge for your group this semester and how did you overcome it?
10. Name two parts of the control segment of gps.
1. By default, what type of network is the Android OS set up not to connect to?
2. If you try to connect an Android device to an Ad-Hoc network what is the main issue you would run into?
3. What is the name of the tool used to manipulate the flash partition on an Android developer phone?
4. Name one Android GPS app that is able to gather GPS coordinates?
5. What is the difference between Ubuntu and Xubuntu?
6. What is the most recent version of the Android operating system & name a device that run the OS? 4.2.1
7. What is JTAG?
8. What is the purpose of the MU_Engineer network?
9. What is the purpose of the bootloader, which is a part of the Android SDK for HTC phones?
10. What is the most important thing to remember when writing a Knock Knock Server?
1. True or False: A bluetooth network and a WiFi network can coexist peacefully.
2. How many power levels (classes) of Bluetooth networks are defined?
3. A Class I Bluetooth network has an estimated maximum range of about _____ meters.
4. What does CLR stand for?
5. Latitude lines run (North-South | East-West).
6. Longitude lines run (North-South | East-West).
7. Without an almanac, how long will it take a GPS device to get a fix on its location?
8. Which layer of the atmosphere creates the most interference with GPS signals?
9. If during the demo your robot began to drive east until it found some water to drink, where would it be?
10. Name the robot destined to win all in a robot wars competition.
1. What does DHCP stand for?
2. What is the difference between IP and TCP?
3. What is the correct address for "localhost" in IPv6.
 - a. 127.0.0.1
 - b. ::1
 - c. 192.168.1.1
 - d. 123 Fake St.
4. (True/False) Port 80 is the standard port for SSH.
5. What is the name of the man who distributed OpenVex?
6. How many bytes are in a standard int in C?
7. What year did google buy Android, Inc?
8. What does "Ubuntu" mean? Where is it from?
9. What logic gate makes up the head of the Android robot?
10. What is the single greatest major a person could have at a University?
 1. What was the most complicated issue when working with the Vex Project?
 2. (True/False) All teams were able to go over all the waypoints successfully
 3. How was the tilt control functionality implemented?

4. What is the measurement unit called "Ron Feet" ?
5. What is the best way to rename a project in Eclipse? And what should be avoided?
6. Which device has a faster orientation chip, the Nexus S or the Nexus 7?
7. What is the name of then Nexus Noob-friendly rooting tools?
8. From the beginning of the semester we received 3 devices the Nexus S and the Nexus 7, what's the name of the third device?
9. What is the name of the server/client app we revised from the beginning of this class?
10. How many teams got the GPS working?
 - a. -1
 - b. 0
 - c. 1
 - d. 3
 - e. 2
1. What type of radio transmissions and what band does Bluetooth operate in?
2. What was Bluetooth originally conceived as and what problem does it overcome?
3. Who created Bluetooth and in what year?
4. What are some similiar applications for Bluetooth and Wi-Fi?
5. In the Android User Interface for the Vex, what should it be able to do?
6. What Wi-Fi channels are legal in the United States and which are illegal?
7. What does DNS stand for and what does it mean?
8. What is the ideal range for Bluetooth?
9. What was one of the first recognizably modern embedded systems?
10. What are three characteristics of Embedded Systems?
 1. Which sensor inside the android device is used to determine the tilt control?
 - a. Gyroscope
 - b. Magnetometer
 - c. Accelerometer
 - d. Camera
 2. Which android command was used to implement the tilt command?
 3. If GPS could not be used to determine the location of the waypoints, how else can the robot be programmed to drive on the course?
 4. Of all of the aspects of the project 3 iteration, which one caused the most difficulty, and why?
 5. How many satellites are required to be visible to receive data from the almanac, and thus get GPS data?
 6. Which of the following operating systems are based on Linux?
 - a. Windows
 - b. Android
 - c. Blackberry 7
 - d. QNX
 - e. All of the Above
 7. What is the CPU aboard the Nexus 7 Tablet?
 8. Why can't floating point arithmetic be processed by the VEX microcontroller?
 9. What is the most effective way to disable a robot?

10. Which frequency bands are used with the IEEE 802.11 (Wi-Fi) Standard?
 1. The robot we worked on and built this semester is called what?
 2. Which of these did we not have to work and get communication from?
 - A. Netbook
 - B. Android
 - C. Phone
 - D. GPS
 3. What is OpenVex?
 4. The API consists of functions for the following devices except for which one?
 - A. Analog Sensors
 - B. Battery
 - C. Motors
 - D. Digital Sensors
 5. OpenVex can be used to program the Vex under what operating system?
 6. What is autonomous mode?
 7. What does GPS stand for?
 8. What numbers of Gigahertz can be used for the IEEE 802.11?
 9. What are the two types of wireless networks?
 10. What sends signal to and back from a GPS system?