



Webinar: Top 10 Tips for the Updated AP® Statistics Exam - Extended Q&A
(presented live: Wednesday, April 29, 2020 at 6:00 PM ET)

For the recording: <https://go.bfwpub.com/ap-course-updates-ap-statistics.html>

For more information or additional questions please [contact your BFW rep](#) or email hsmarketing@bfpwpub.com. Thank you!

Question	Answer
If you were to take a picture to send to College Board, would it be a normal picture or a scan of the document?	This has been a frequent question on the AP® Community and it is NOT clear if a pdf of handwritten work is OK. The webinar said if it was a picture of student work, it should be in jpg format. I hope they clarify this, as there are many ways to scan to pdf from a phone (google drive, cam scanner, etc). Update: Trevor Packer sent a message to an AP® Stats teacher that said "pdf files will not be accepted."
Love the Stats Medic Review Course!	Awesome. For others who would like to check it out, visit: https://www.statsmedic.com/review-course .
Would love to hear the presenter thoughts on the new info yesterday that there will be no questions that require a graph or diagram and how that would affect things like sketching a quick normal distribution, etc.	We addressed this in the webinar. In short, I think they were trying to be as fair as possible for students who choose to type their answers. And it is likely that this was an AP®-wide decision and not an AP® Stats decision. For this year, it is much more likely that kids will be given a graphical display and asked to interpret it.
Do you think that re-expression will be on the exam this year?	Transformations to achieve linearity rarely show up on a full exam, so I would give this an even smaller chance this year. If I only had 2 FRQ to measure student understanding, I wouldn't waste even a single part on this topic. Of course, you never know...
What is the best way I can work on statistical thinking in my online class?	We addressed this a bit in the webinar. In short, ask lots of "Explain" and "Why" questions. And ask questions that span different parts of the curriculum so kids have to make connections.
Those college board questions you mentioned are available to students, are they available to students without teachers assigning them?	Yes. The students have open access in a new tab to these unlocked FRQs for practice.



Should we go over why to check the 10% condition?	Yes. And the other conditions we check when doing inference that are part of the CED's expectations. Also be sure to emphasize the two purposes of condition checking for all of the inference procedures that are "fair game" for this year's exam: Independence and ensuring that the sampling distribution of the statistic is Approximately normal.
Do we have to draw any graphs in inferencing? For example, if you're given raw data and perform a 1-sample t test but do not have enough sample size, do you need to draw a box plot and/or to show there are no strong skewness and/or outliers? The AP® Exam Updates in the AP® webinar says something about no images and graphs (but that was a general overview for all AP® courses)	The College Board webinar indicated that there would be no graphs/displays required to answer any questions
Will students be able to submit a handwritten response as a pdf? That seems to combine methods 2 and 3 of how to submit with the technology.	We do not know. Please ask College Board.
Can you please show the link to the inference site from the slides?	http://www.ltconline.net/greenL/java/Statistics/cattStatProb/categorizingStatProblemsJavaScript.html
If students type answers in Word what math symbols will they have access to? (Would they need to purchase Mathtype?) And based on personal experience, will typing the math be too slow for most students?	We are recommending that all of our students handwrite answers and take photos, which is much more similar to what we have been asking them to do all year—including during this online term. If students really want to type, the CB has put together a tip sheet here: https://APcentral.collegeboard.org/pdf/keyboarding-tip-sheet-statistics.pdf
Can the student use both. See the question from the computer and the phone? That way they don't have to do the two step process of sending the picture to the computer and then upload.	I believe you can only access the questions from one device, but that it is possible to print them out.
Will AP® live videos remain available to use next year?	Unfortunately we don't know. This is a question for College Board.
When is the end date for AP® live videos?	The schedule currently runs through Friday, May 7th.
I don't recall seeing a green target in the AP® Classroom Question bank, how can I find those questions to practice with students?	Go into AP® Classroom, Click on Question Bank, then Progress, then Optional Student Practice
How do teachers log into the demo? We need an AP® ID	Think you can just type PRACTICE to get started.



I missed that Texas Instruments Webinar, is it still available?	BFW has posted TI's recordings here for easy access: https://go.bfwpub.com/AP-course-updates-AP-statistics.html
Luke gave some fabulous examples of some very common errors made by students in their use of language and symbols. Are there any others that come to mind?	accurate as a synonym for anything good; independence; normal
For Tip #8. Are we sure the time for each question is right?	From the College Board site: "Students will have 25 minutes to read and respond to Question 1, and then 5 minutes to upload their response. After uploading the response to Question 1, students will have 15 minutes to respond to Question 2, with 5 additional minutes to upload their response to Question 2. Once their response to Question 1 has been submitted, they cannot go back to it."
Don't you think the more likely scenario is a simulated test with a dotplot to compute p value? You hit probability, graphs, and inference.	That is certainly one option. It would be challenging to many students, but it would also be hard to look it up on the internet so that may make it more likely to Appear this year than in other years.
Any ideas regarding students with valid extra time during the exam? Or is it assumed that all students will be given equal time?	All accommodations will be given according to the webinar with Trevor Packer. Requests for accommodations were due in January, however. See slide 17 here: https://APcentral.collegeboard.org/pdf/AP-testing-guide-2020.pdf
If typing answers, can students write p-hat (p dash hat)	yes, see tip sheet here: https://APcentral.collegeboard.org/pdf/keyboarding-tip-sheet-statistics.pdf
If students are typing answers, can they type "p-hat" or "x-bar" instead of their actual symbols that would be difficult to type (unless students are familiar using Math Type)?	yes, see tip sheet here: https://APcentral.collegeboard.org/pdf/keyboarding-tip-sheet-statistics.pdf
Which AP® ID can I use as a teacher?	College Board will need to answer this one.
Do teachers have AP® IDs? It is required for the demo	College Board will need to answer this one.
Will you have one of these webinars for AP® Calculus?	Not at this time - however, the latest edition of AP® Calculus textbook, <i>Sullivan/Miranda Calculus for the AP® Course</i> , 3rd edition, is fully aligned to the new CED. Learn more: https://go.bfwpub.com/ap-course-updates-ap-calculus.html .



<p>I tried the demo that is supposed to only be available on May 4. When I called College Board today, they said that it would check to confirm everything done correctly. I am skeptical it did. I opened on the computer, hand-wrote answers, took pictures, shared pictures to the computer, downloaded to the computer, and then submitted. I think this works, but I am not clear how I confirm this.</p>	<p>College Board will need to answer this one.</p>
<p>I have only taught my kids how to find p-values using a ti84 and not the tables. Do I need to give them a crash course?</p>	<p>Answered near the end of the webinar.</p>
<p>So May 4th is the first day to practice the logistics of the test. Can students practice it after May 4th? Can they practice multiple times?</p>	<p>I would think so, but you will need to check with College Board.</p>
<p>Other than Chi-Square and Inference with regression, which are not on the exam, are there any topics you would recommend not concentrating on in preparation for the exam?</p>	<p>Calculator techniques. Otherwise, everything is fair game.</p>
<p>Topic specific question, do you believe paired t-tests will be on the test? It's not in the CED, however it has been on many of the reviews for the new exam.</p>	<p>Answered near the end of the webinar.</p>
<p>Do you think the old "Investigate Task" questions/Question #6 on the AP[®] Exam might be a basis for students to understand encompassing multiple concepts?</p>	<p>Maybe, although there should be nothing on this year's exam that will ask students to go outside the curriculum.</p>
<p>Are you going to create more practice questions for the 2020 exam? I have seen a few on the AP[®] Discussion Board</p>	<p>We aren't planning to.</p>
<p>It has been speculated that a possible topic for one of the questions would involve interpreting and answering a question from a simulation. The question could start with a sampling distribution and move toward identifying and interpreting a p-value. Outside of some of the activities we may have already done, do you have any suggestions for practice problems to do with our students?</p>	<p>There are some great simulation-based inference questions on old AP[®] exams: 2009 #6, 2009B #5, 2013 #5.</p>



<p>Any guesses on what will be asked? Probability tree? Expected mean? One sample or two sample inference? R? R squared? Slope in context? Would love your guesses. Won't hold you to it?</p>	<p>We made some guesses in the Office Hours webinars we did for TI. See: https://www.youtube.com/watch?v=q4h07xGKDO A and https://www.youtube.com/watch?v=Wt-ObrXndso (BFW has also collected them here: https://go.bfwpub.com/ap-course-updates-ap-statistics.html)</p>
<p>Since a calc. doesn't seem to be as important this year, will finding a critical value, or p-value for a t-interval/test be on the exam? Should we advise our students to use the tables as opposed to the calc?</p>	<p>We addressed this briefly near the end of the webinar.</p>
<p>A lot of students in my school don't have graphing calculators and I have instructed them to use an online/virtual one. Is that going to be allowed on the exam?</p>	<p>Yes, but it shouldn't be needed acc to CB. If students plan to have one open during the exam, make sure they know how to use it or it might cause more problems than it solves.</p>
<p>What are some suggestions for practicing "statistical thinking"?</p>	<p>We addressed this a bit in the webinar. In short, ask lots of "Explain" and "Why" questions. And ask questions that span different parts of the curriculum so kids have to make connections.</p>
<p>There are a few students who might try to "collaborate" as they normally do in work groups in class. How can we convince them this will result in a 0 on the exam?</p>	<p>I would tell them that it isn't worth the risk of being caught, or their integrity. CB/ETS has some clever ways of identifying cheating.</p>
<p>In probability, you need to show work. Can a student leave the answer as a fraction and still receive full credit without converting it to a decimal?</p>	<p>Yes. See webinar recording as well, since this one answered live.</p>
<p>How about .01/.03? Is this acceptable?</p>	<p>I would think so.</p>
<p>Will there be a thumbnail image after the students upload so that they can verify that the correct document was uploaded successfully? Will there be a confirmation of the upload given to the student?</p>	<p>I am not sure. My suggestion would be to practice on May 4. See https://APcentral.collegeboard.org/pdf/AP@-testing-guide-2020.pdf for more details.</p>
<p>Are students allowed to access and use online resources during the test or do students need to print them beforehand?</p>	<p>They can use online resources, but it would be wise to have certain things printed out (e.g., formula sheet).</p>



<p>Do you have any advice on which device to recommend students use (computer vs. phone)? To me, it feels like it would be easier to read questions off a computer... but easier to take a picture of your responses using a smartphone. Will you be advising either option to your students in particular?</p>	<p>I would explain the pros and cons of each method to my students and let them choose. I suspect most students in statistics will hand write their answers.</p>
<p>I believe they said in the webinar that there would be no graphs required.</p>	<p>That is correct.</p>
<p>If a student uploads their work and the quality of the photo is not clear enough, will the student be notified or have another chance to upload?</p>	<p>I don't know the official answer, but I would imagine the answer is No.</p>
<p>Can students use the TI App on their Chromebook?</p>	<p>Yes.</p>
<p>The AP® Demo says to launch the test 30 minutes before the scheduled time.</p>	<p>We recommend this as well.</p>
<p>Using the E P I holistic scores, will multiple 'parts' band together to force scores into the 4,3,2,1,0 ?</p>	<p>No one knows at this point. I would imagine they would expand the 0-4 scale to 0-5 or 0-6 to create more distinction among students.</p>
<p>Will they be able to see all parts of the question at once? So can they go back and improve an answer on part b if they are working on part c, or if they just want to check their work for all of it before submitting?</p>	<p>I would imagine they can go back and forth within a question. But they won't be able to go back to question 1 when doing question 2.</p>
<p>Thank you for doing this. What will you recommend to your students regarding how they download/submit their exams on exam day?</p>	<p>I would explain the pros and cons of each method to my students and let them choose. I suspect most students in statistics will hand write their answers.</p>
<p>What do you expect to see on this year's exam about Transforming for Linearity? Certainly no calculations!</p>	<p>Transformations to achieve linearity rarely show up on a full exam, so I would give this an even smaller chance this year. If I only had 2 FRQ to measure student understanding, I wouldn't waste even a single part on this topic. Of course, you never know...they could ask "which is the better model" based on a couple of residual plots.</p>
<p>Can students use 2 devices? For example, use the phone to download and submit, but open the Q on computer to get a better look at it?</p>	<p>I don't think they will be able to access the questions on more than one device.</p>
<p>In case p-value is asked to be explained, how will you explain it briefly?</p>	<p>A standard interpretation would be something like: "Assuming both treatments are equally effective, there is a 0.01 probability of getting a difference in sample means of 2.3 or greater by chance alone."</p>
<p>Should we practice multiple choice?</p>	<p>I think there is still value in assigning MC items, as the distractors often poke at common misunderstandings. And you can cover lots of</p>



	topics in a short amount of time.
Where can we find practice questions for a mock exam?	We made some items for the Office Hours webinars we did for TI. See: https://www.youtube.com/watch?v=q4h07xGKDOA and https://www.youtube.com/watch?v=Wt-ObrXndso There are also some other mock exams that Jared Derksen and Jeff Eicher created. See the AP® teachers community for these.
Where can we get those questions?	See previous answer.
I use TPS 2nd edition. Is there a way to access the Cumulative tests 1,2,3 from the current text that Daren referred to?	Please contact your BFW Rep with this request: go.bfwpub.com/findmyrep
I want to make sure after the last answer. Can a student use a mix of the phone and a computer to read and submit answers?	Only one device can be used to access questions and submit answers. If this is a laptop, a phone could be used to take a picture of student work, but then the file would need to be transferred to the laptop. CB hasn't promoted this method because of the extra step. See https://APcentral.collegeboard.org/pdf/AP-testing-guide-2020.pdf for more info.
In yesterdays webinar they said that students wouldn't need graph or use diagrams to answer questions. Do you think they still may to answer a question completely?	I don't think students will need to produce any graphs/figures/etc, according to the webinar. Most likely these will be provided.
Shout out to StatsMedic! Go EFFL!	We love Stats Medic! Be sure to follow them on Twitter @TheStatsMedic.
AP® STATS keyboarding tip sheet is up! Find it here: https://APcentral.collegeboard.org/pdf/keyboarding-tip-sheet-statistics.pdf	Thank you!
Do you know if students can type part of an answer and take a picture of the different part of the same question answer?	I don't think this is allowed according to the discussions I have read on the AP® community. But there is some uncertainty about this. To be safe, I would advise students to pick one method (typing or handwriting) and use it for the whole question. I believe that they can change format from Question 1 to Question 2 however, if they aren't happy with their method in Q1.



	<p>We made some items for the Office Hours webinars we did for TI. See:</p> <p>https://www.youtube.com/watch?v=q4h07xGKDOA</p> <p>and</p> <p>https://www.youtube.com/watch?v=Wt-ObrXndso</p>
<p>Have you developed any other practice questions as you did in the first webinar a few weeks ago? Those were very helpful!</p>	<p>There are also some other mock exams that Jared Derksen and Jeff Eicher created. See the AP® teachers community for these.</p>
<p>I am worried about special characters in answering the questions. Any thoughts about mu or p-hat or any other symbology</p>	<p>See https://APcentral.collegeboard.org/pdf/keyboardsing-tip-sheet-statistics.pdf</p>
<p>Students CAN use the internet during the test?</p>	<p>Yes, but it is very unlikely to be helpful and more likely a time waste.</p>
<p>Does the teacher need to assign the questions in AP® Classroom in order for the students to see them?</p>	<p>I think students should be able to see the "green badge" items without the teacher assigning them.</p>
<p>Can we do these webinars every year? :)</p>	<p>To stay up to date on webinars and other events, be sure to follow BFW on Twitter: @bfwhighschool as well as check our site: https://www.bfwpub.com/high-school/us</p>
<p>If students are familiar with the older formula sheet, would they be fine still using that one?</p>	<p>I would encourage them to use the new one, as it has some new formulas (geometric, standard errors of stats, etc).</p>
<p>Is it true scores will be available before school ends (a week or two after the test)?</p>	<p>No. Scores won't be available until July 15. However, teachers will have access to their students' responses on May 26, according to Trevor's first webinar.</p>
<p>What specific material from the units that will be covered are not likely to be on the exam?</p>	<p>I wish we knew!</p>
<p>Not a question, just a shout-out to Josh: I was a student in his excellent AP® Stats Institute in Tucson a few years ago. We haven't averaged less than 4.00 on the exam since :)</p>	<p>Thank you for the shout-out. Keep up the good work!</p>
<p>Trevor mentioned a few times last night in the webinar that the student will not be required to graph anything. So does that mean we shouldn't expect any questions where the students need to sketch a box plot, dot plot, etc.?</p>	<p>That is my understanding.</p>



<p>Where can we find the questions Daren mentioned at the very end of the webinar...ones that practice going between the topics...ones he's using over the next three weeks.</p>	<p>We made some items for the Office Hours webinars we did for TI. See: https://www.youtube.com/watch?v=q4h07xGKDOA and https://www.youtube.com/watch?v=Wt-ObrXndso</p> <p>There are also some other mock exams that Jared Derksen and Jeff Eicher created. See the AP® teachers community for these.</p>
<p>Given that students shouldn't need a calculator with statistical capabilities for the exam, should students know how to use the z and t tables for the exam (Tables A and B)?</p>	<p>See recording for full answer. We addressed this at the end of the webinar.</p>
<p>Given that students won't have to calculate confidence intervals, test statistics, and p-values, do you think it makes sense to still assign students free-response questions that involve constructing confidence intervals and performing full-blown significance tests as practice?</p>	<p>Yes, as students could be asked to do most of the components of the typical four-step process (other than cranking out the calculations). It is also possible that they might ask students to set up the calculation of a test statistic, but not evaluate it.</p>
<p>Are you telling your students to handwrite or type their responses for the exam?</p>	<p>I think most statistics students will hand write their responses.</p>
<p>I have a general question about inference: What are the advantages/disadvantages to teaching students the State/Plan/Do/Conclude process for intervals and tests as opposed to the common acronyms PANIC and PHANTOMS?</p>	<p>See recording. Luke addressed this at the end of the webinar.</p>
<p>Thank you. Luke, your review course has been a life saver!!!!!!</p>	<p>That is fantastic to hear. For others who would like to learn more about the Stats Medic Review course - visit: https://www.statsmedic.com/review-course.</p>
<p>How does College Board expect students to type the correct statistical symbols?</p>	<p>See https://APcentral.collegeboard.org/pdf/keyboardsheet-tip-sheet-statistics.pdf</p>
<p>Does the second question show up as soon as you submit the 1st question? Or does it come up after the 30 minutes?</p>	<p>See webinar for the full answer - but no, the 2nd question will not come up immediately after the first one is answered (for a number of reasons) but will come up at its designated time.</p>
<p>My students told me that they want to write the answers on paper. Can you please discuss tips to upload the answers.</p>	<p>Practice on the CB site. See https://APcentral.collegeboard.org/pdf/AP-testing-guide-2020.pdf for more info.</p>



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<p>Daren Starnes mentioned at the end some set of "multifocus" questions that he was using right now with his students. Is this resource accessible to us? Thanks</p>	<p>There are also some other mock exams that Jared Derksen and Jeff Eicher created. See the AP® teachers community for these.</p>
<p>Do we know if students have to wait the entire 25 minutes for the first question before moving on to the second? Will all students be starting the second question at the same time?</p>	<p>See the live recording for the full answer - but yes, students will have to wait the full time between questions - and they will start them at the same time.</p>
<p>The testing guide says there will be no graphical images, meaning students will not need to graph.</p>	<p>It does and that is correct! For those who would like to review the test guide, visit https://APcentral.collegeboard.org/pdf/AP-testing-guide-2020.pdf</p>
<p>Since typing is an option, I would assume they will be able to write out things like μ or σ or p-hat.</p>	<p>See https://APcentral.collegeboard.org/pdf/keyboardsing-tip-sheet-statistics.pdf</p>
<p>Thank you. I Appreciate all the work and help provided this year.</p>	<p>Thank you - we appreciate your support. Good luck on the exam.</p>
<p>Can the cumulative tests be sent out on a platform like Google Classroom?</p>	<p>These are in the student edition of TPS (4e, 5e, and 6e).</p>
<p>Can our students access this webinar?</p>	<p>Yes - to show students the webinar, please share the URL to the page with the recording: https://go.bfwpub.com/200429-Top-10-Tips-for-the-Updated-AP-Statistics-Exam.html.</p>
<p>You mentioned that students can retake in June. How does College Board know if there was a technical issue? i.e. Power Outage</p>	<p>I believe there will be a form to fill out. See slide 18 here: https://APcentral.collegeboard.org/pdf/AP-testing-guide-2020.pdf</p>
<p>Not a question, but the demo is available today. I've been practicing all day. https://AP2020examdemo.collegeboard.org/</p>	<p>That's great! Thank you for letting us know.</p>
<p>Are the questions from this year's exam going to be posted on the College Board with rubrics like normal years?</p>	<p>Not sure. My guess is that they won't be posted in the normal way, as these items will be fundamentally different than what kids will see in future years.</p>
<p>In your opinion, do you think it is better/more efficient to write out the answer on paper, or just type it out on the computer? I'm asking because I don't know how to type out formulas on the</p>	<p>Answered in webinar and above.</p>



computer. :)	
I would love to make a guided notes worksheet for my students to fill in while watching this later. I don't mind making it, but is this something that someone else is already making?	Not that we know of. But good idea!
Given what has been said about the calculator being more of a comfort this year than anything else, Can students use TI Emulator software to produce screenshots of their graphical displays/output from the calculator to copy on to a word doc as part of their solution to the question(s)? TI is giving students a free six month trial of the student version of the emulator right now and it is a valuable tool which is why I am asking this question. Thanks!	I suppose they could, but there should be nothing on the exam that would require output from a calculator (e.g., graphs, normalcdf output, etc). So I wouldn't spend time teaching students how to do this.
If students are not required to sketch, could that mean it is less likely to sketch a flow chart for an experiment?	I would expect that questions about experiments should be answered in sentence form with no diagrams required.
Just want to say, THANK YOU!!!	Thank you for joining our webinar and for your support.