AdTrans project , 2023-1-PL01-KA220-HED-000158917

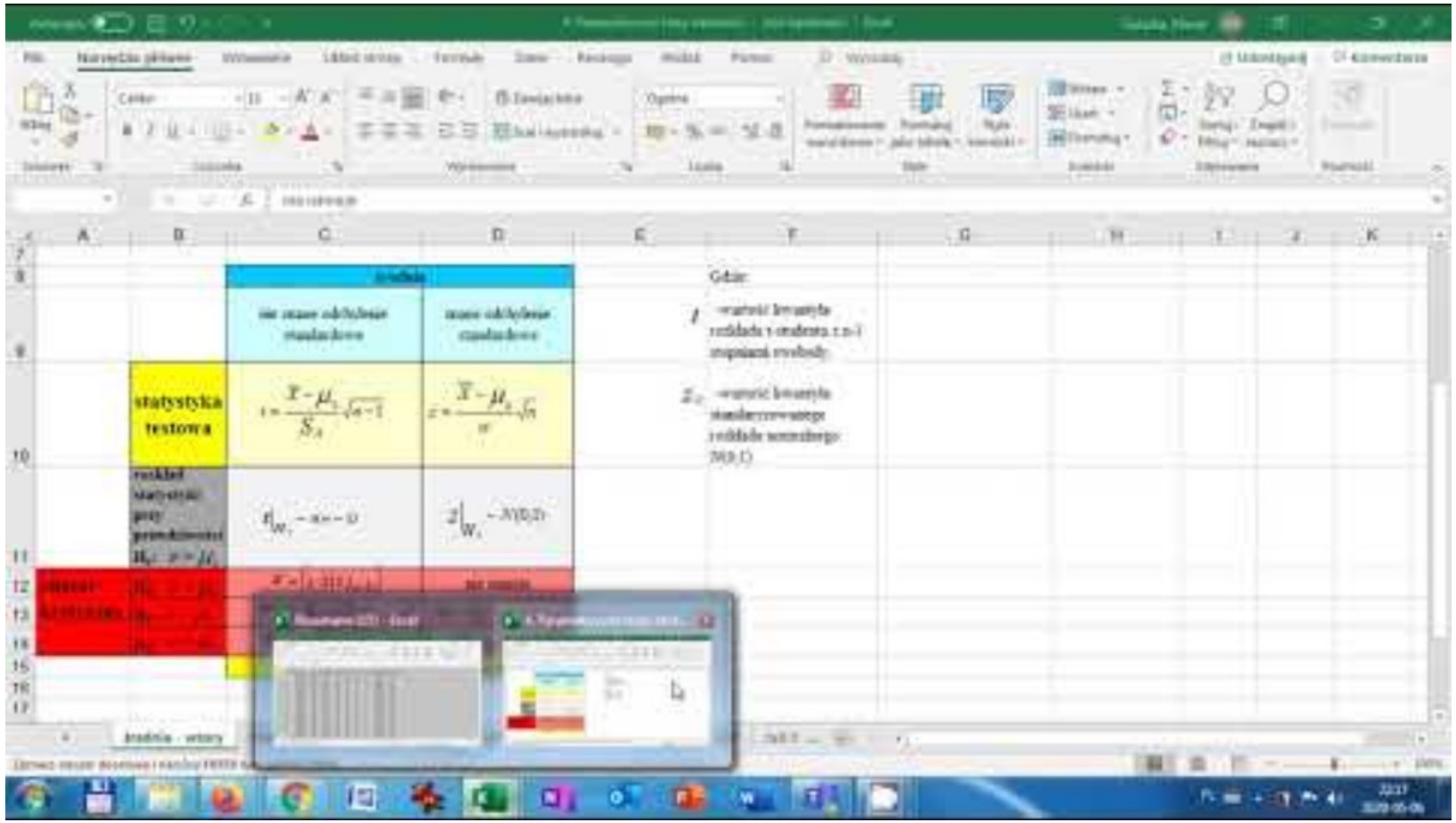
ADTRANS
ADVANCED DATA ANALYSIS FOR TRANSPORTATION AND MOBILITY ACADEMIC TEACHERS

Parametric Significance Tests – additional content

Joanna Wachnicka

Co-funded by the European Union

Statistical Hypothesis Testing Using Excel



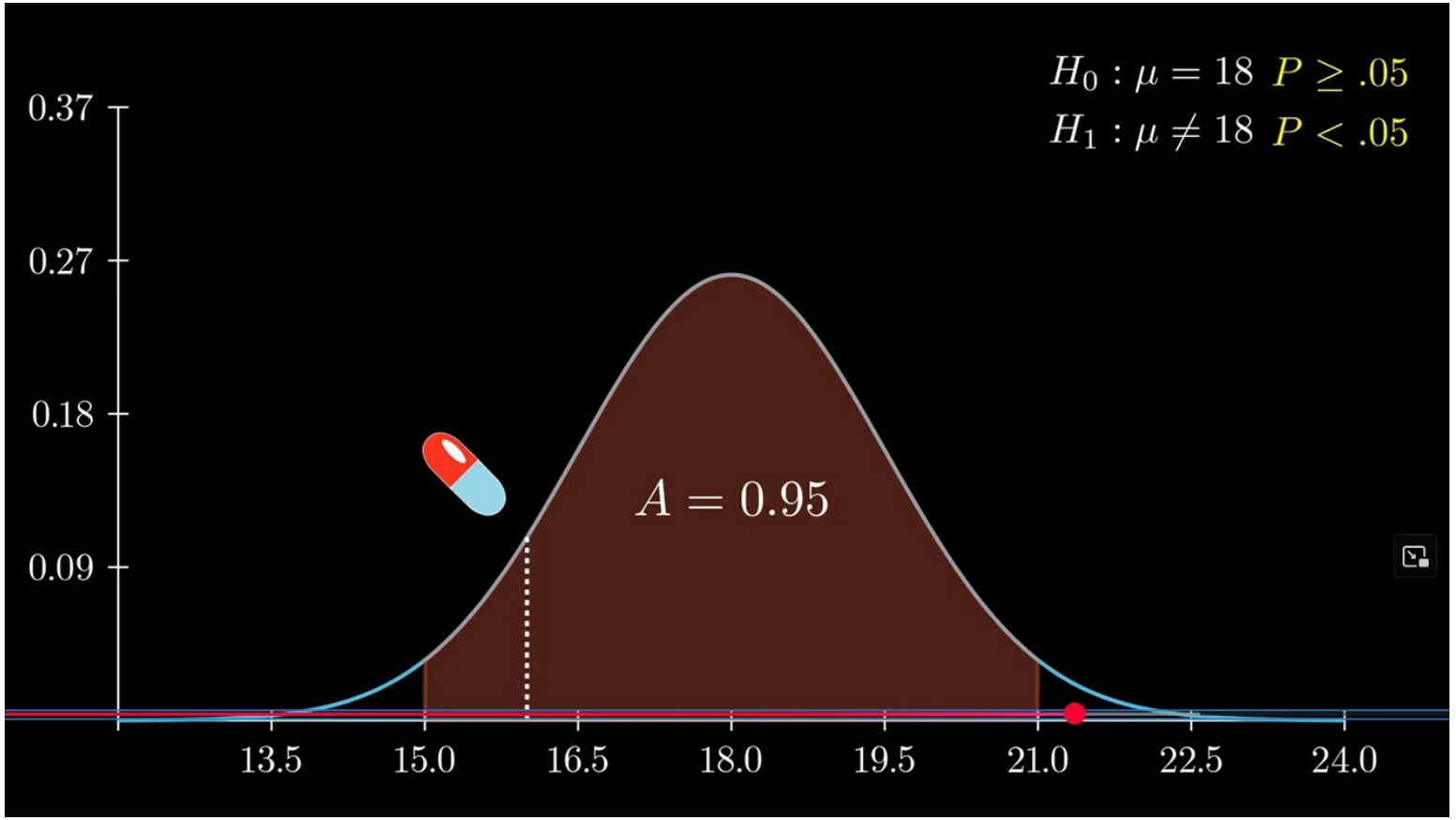
https://youtu.be/GqaYaKuHv0g?si=EmvYFCaWtr9eGlch

Statistical tests - hypotheses, level of significance

https://www.youtube.com/watch?v=xOwKOUqb8MI

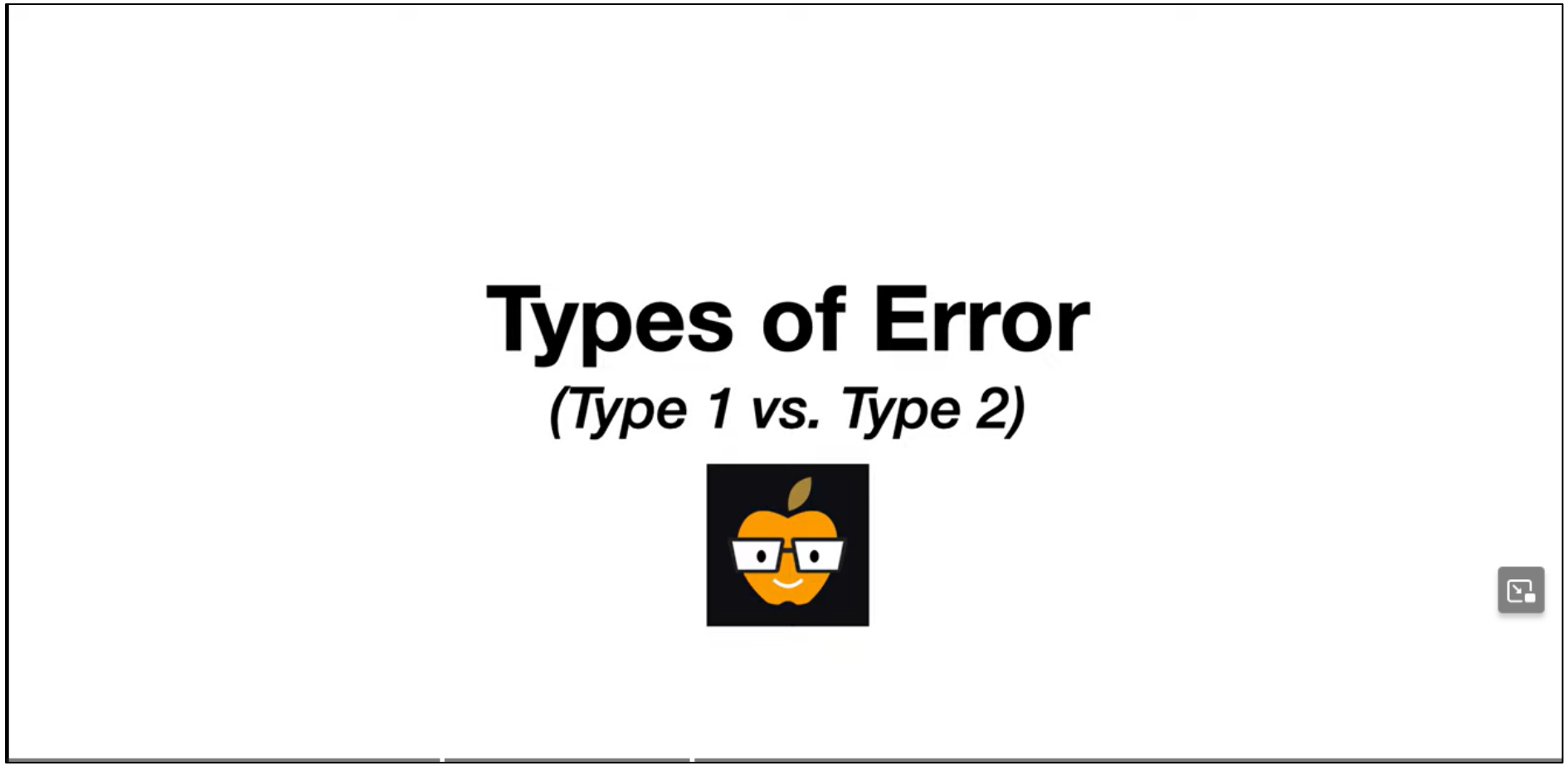
English subtitles available

Verification of hypotheses with an example



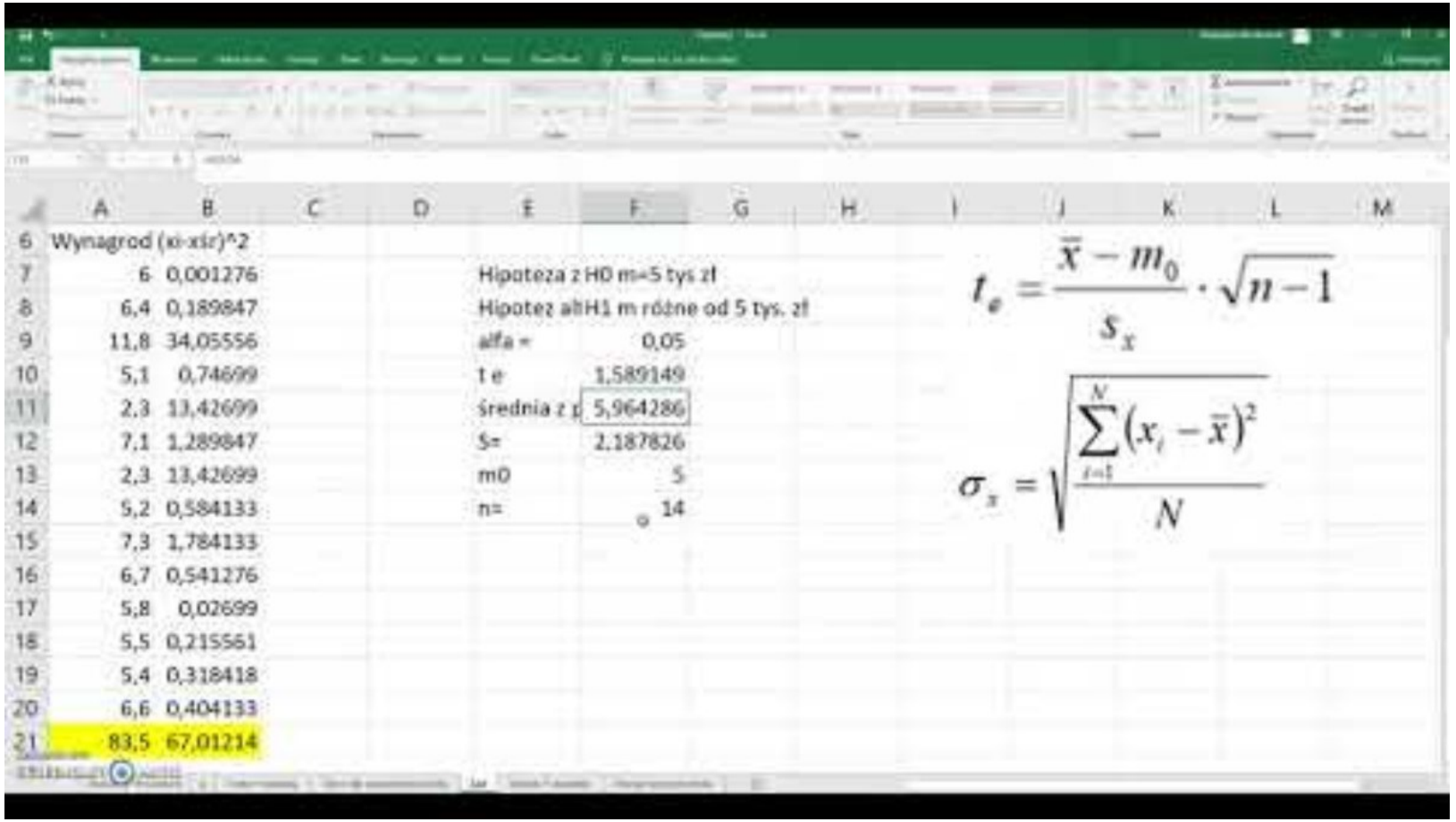
https://www.youtube.com/watch?v=tdj-hoivzHQ

Hypothesis Testing - Introduction



https://www.youtube.com/watch?v=SBt7q2m_Ncw

T-test for mean



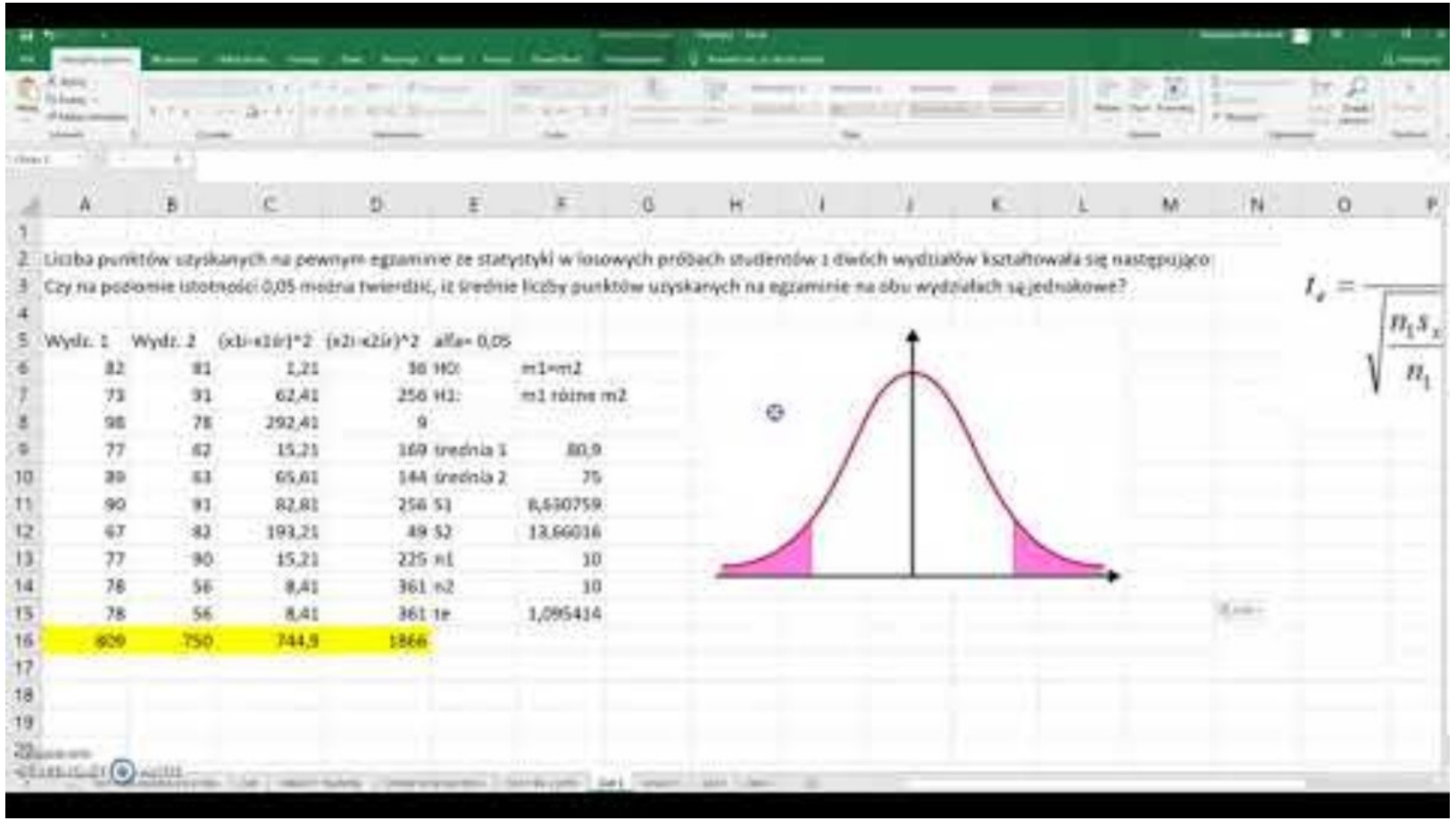
Description:

How to verify a statistical hypothesis about the mean value (t-test for the mean). For the purposes of my classes, I created videos that are to help my students pass the exam in the era of distance learning.

https://www.youtube.com/watch?v=ENqjyPVi3jw

English subtitles available

T-test for two means



Description:

How to verify the statistical hypothesis of the equality of two means (t-test for two means). For the purposes of my classes, I created videos that are to help my students pass the exam in the era of distance learning.

https://www.youtube.com/watch?v=NIUWiBKO_SQ

English subtitles available

How to perform t-test in Excel

	Paired t-test		Unpaired t-test	
	Temperature (°C)		Height (cm)	
	Morning	Evening	Boys	Girls
Place-1	21	20	150	140
Place-2	20	19	145	132
Place-3	23	22	146	139
Place-4	24	20	135	141
Place-5	19	19	151	145
Place-6	20	20	160	151
Place-7	17	18	148	146
Place-8	22	21	149	147
Place-9	23	20	155	140

The Student's t-test or simply t-test tells you how significant the differences between groups are. It can either be paired or unpaired t-test depending on whether the data is paired or unpaired. The ultimate goal for you is to find the p value and if it is less than 0.05 then there is significant difference between the two groups. If it is more than 0.05 then there is no significant difference between the two groups.

https://www.youtube.com/watch?v=YqEnYntesSg

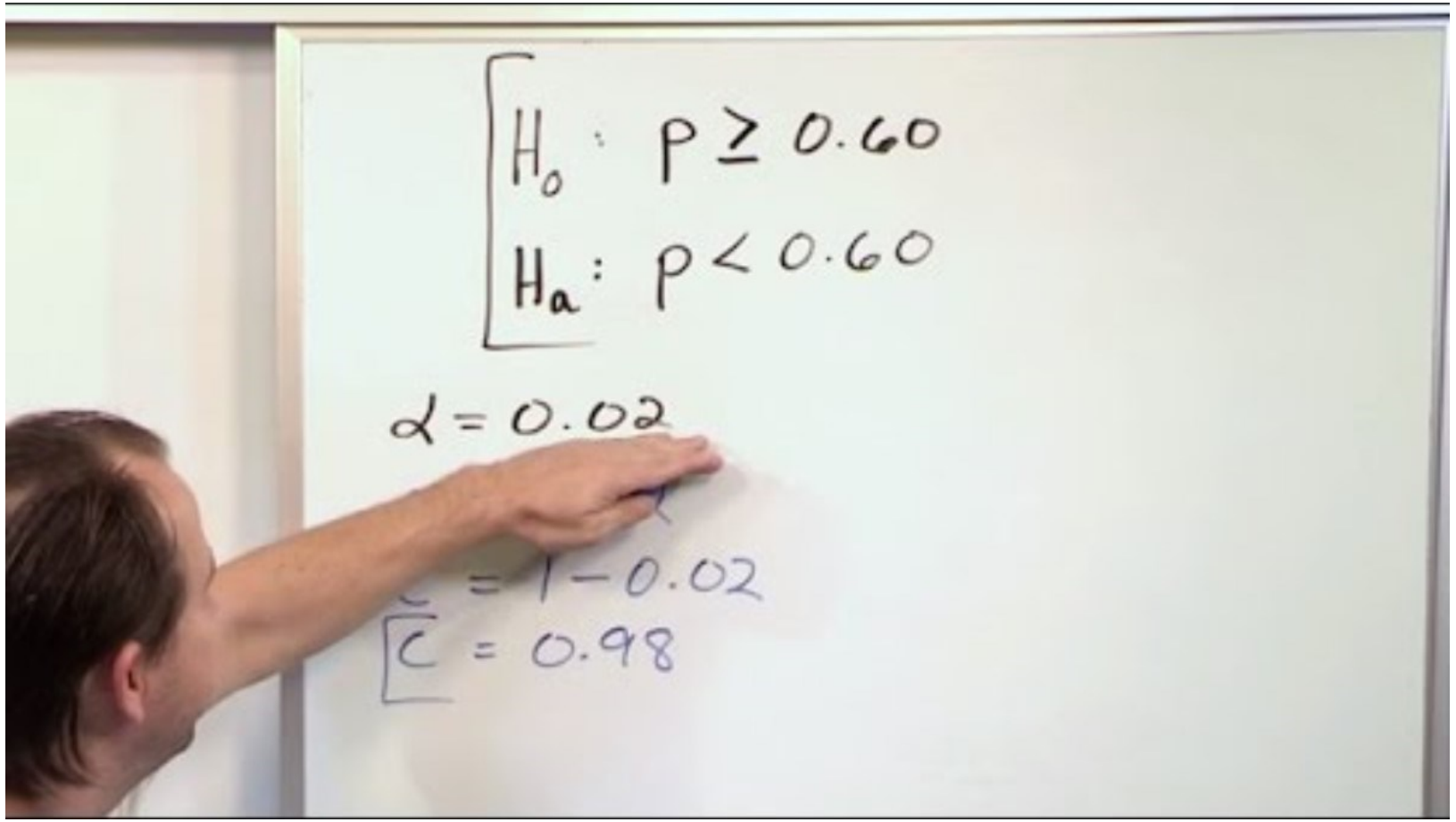
t-Test - Full Course - Everything you need to know

What is a t-test and when is it used? What types of t-tests are there? What are hypotheses and prerequisites in a t-test? How is a t-test calculated and how are the results interpreted?

The t-test is a statistical test procedure and checks whether there is a significant difference between the means of two groups..

https://www.youtube.com/watch?v=VekJxtk4BYM

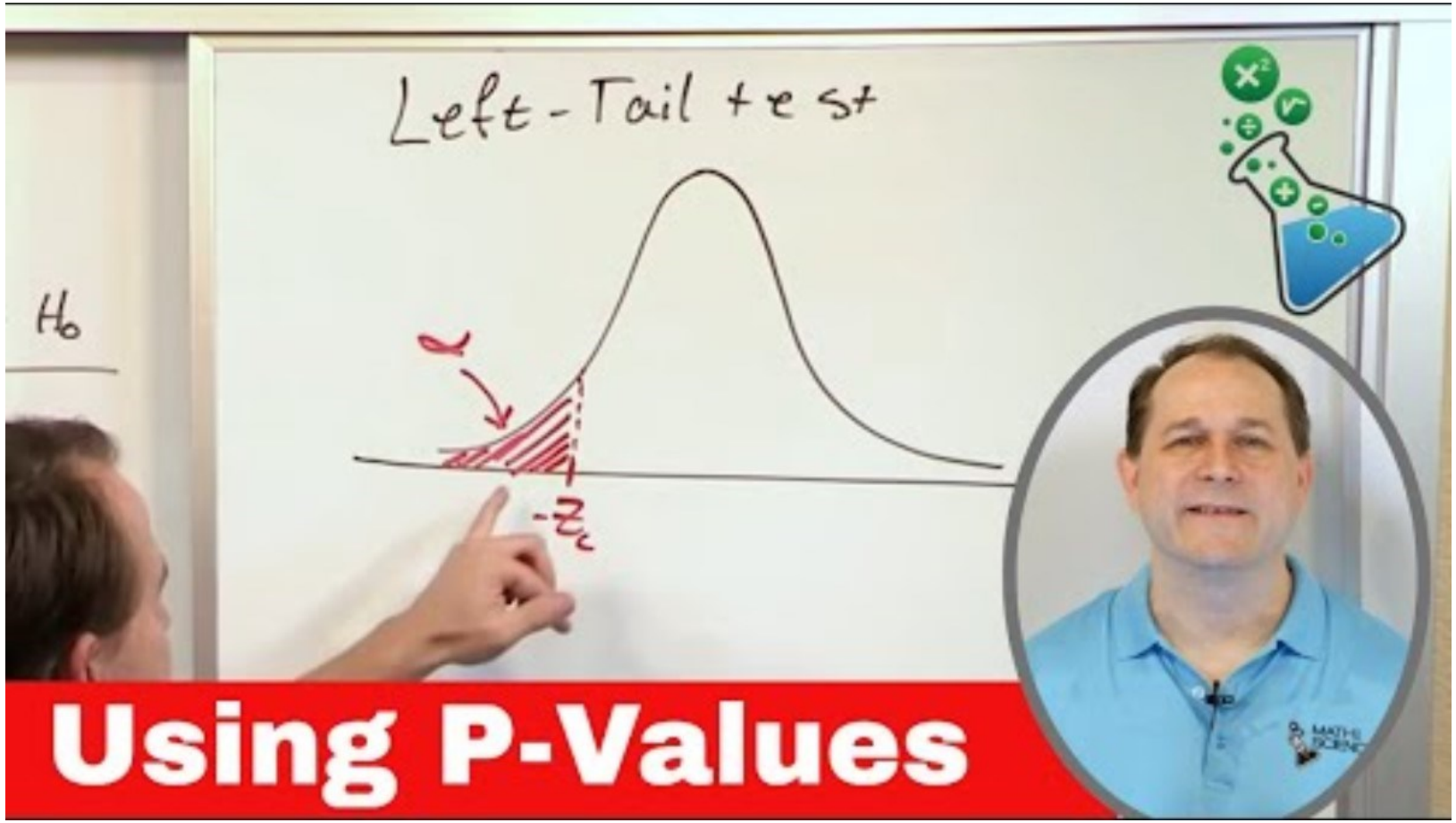
Null and Alternate Hypothesis - Statistical Hypothesis Testing - Statistics Course



https://www.youtube.com/watch?v=_Qlxt0HmuOo

The student will learn how to write the null and alternate hypothesis as part of a hypothesis test in statistics. We will work several examples so that the student gains an understanding of how to work hypothesis testing problems step-by-step..

Using P-Values in Hypothesis Testing (Compare P Value to Level of Significance)

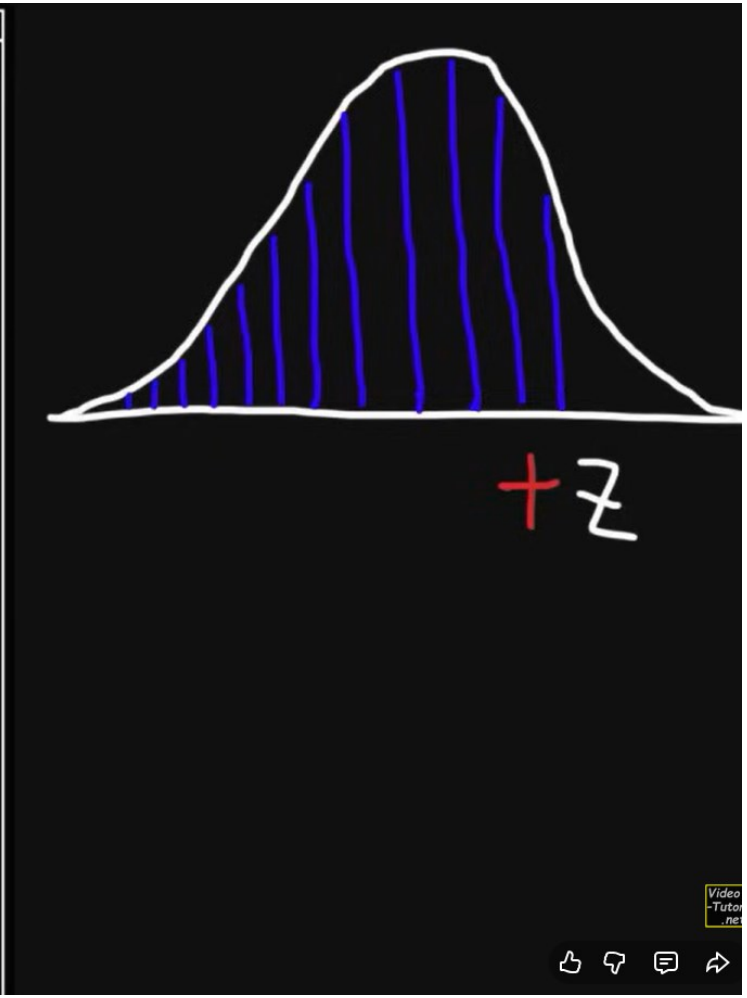


In this lesson, we continue our discussion of p values in statistical hypothesis testing. You will learn how to use the p-value to determine whether to reject the alternate hypothesis or fail to reject the alternate hypothesis.

https://www.youtube.com/watch?v=5FmxvmlOmfA

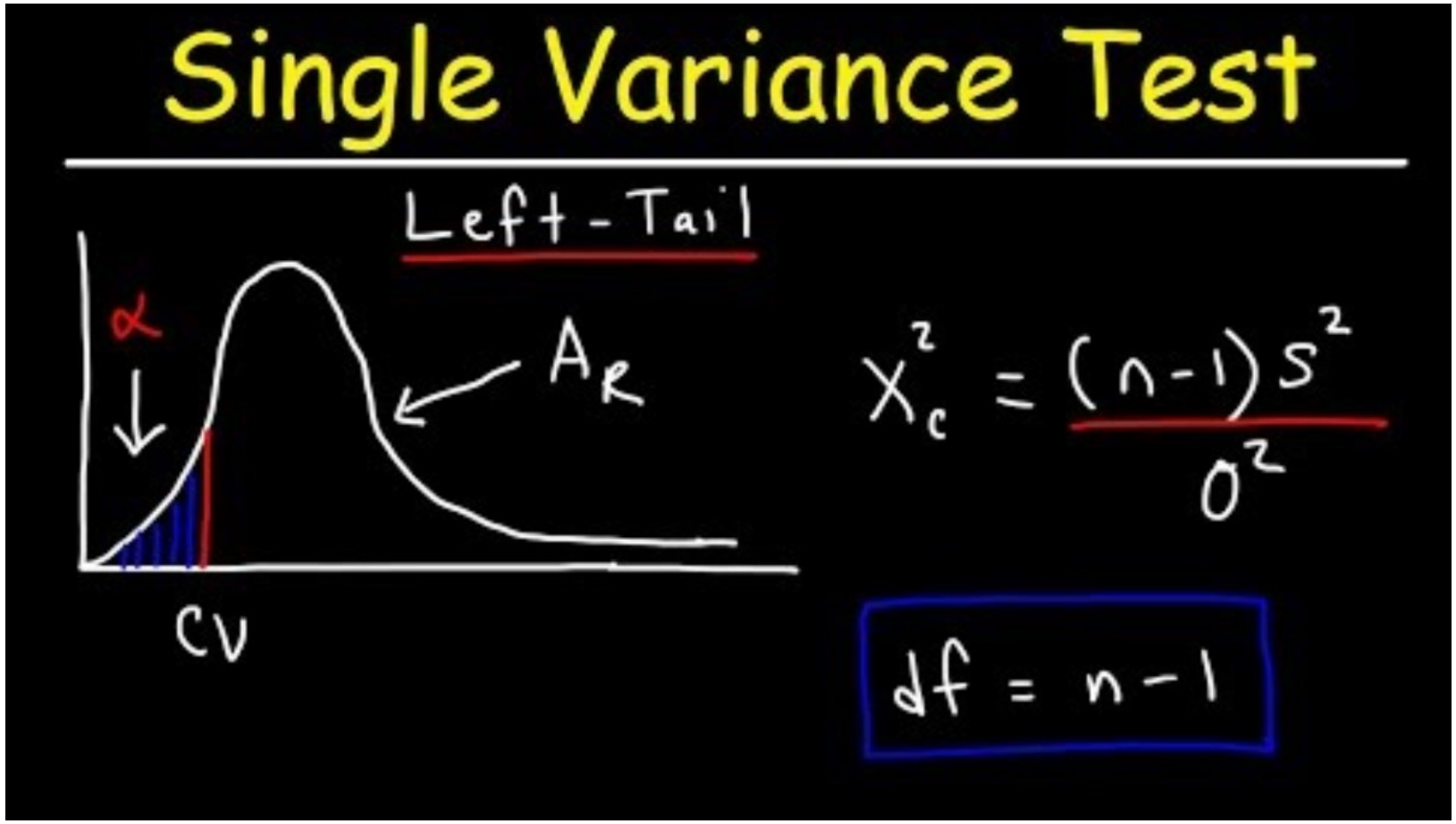
Test for two means with unknown distributions, small combined sample

Z	0	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
+0	0.50000	0.50399	0.50798	0.51197	0.51595	0.51994	0.52392	0.52790	0.53188	0.53586
+0.1	0.53983	0.54380	0.54776	0.55172	0.55567	0.55966	0.56360	0.56749	0.57142	0.57535
+0.2	0.57926	0.58317	0.58706	0.59095	0.59483	0.59871	0.60257	0.60642	0.61026	0.61409
+0.3	0.61791	0.62172	0.62552	0.62930	0.63307	0.63683	0.64058	0.64431	0.64803	0.65173
+0.4	0.65542	0.65910	0.66276	0.66640	0.67003	0.67364	0.67724	0.68082	0.68439	0.68793
+0.5	0.69146	0.69497	0.69847	0.70194	0.70540	0.70884	0.71226	0.71566	0.71904	0.72240
+0.6	0.72575	0.72907	0.73237	0.73565	0.73891	0.74215	0.74537	0.74857	0.75175	0.75490
+0.7	0.75804	0.76115	0.76424	0.76730	0.77035	0.77337	0.77637	0.77935	0.78230	0.78524
+0.8	0.78814	0.79103	0.79389	0.79673	0.79955	0.80234	0.80511	0.80785	0.81057	0.81327
+0.9	0.81594	0.81859	0.82121	0.82381	0.82639	0.82894	0.83147	0.83398	0.83646	0.83891
+1.0	0.84134	0.84375	0.84614	0.84849	0.85083	0.85314	0.85543	0.85769	0.85993	0.86214
+1.1	0.86433	0.86650	0.86864	0.87076	0.87286	0.87493	0.87698	0.87900	0.88100	0.88298
+1.2	0.88493	0.88686	0.88877	0.89065	0.89251	0.89435	0.89617	0.89796	0.89973	0.90147
+1.3	0.90320	0.90490	0.90658	0.90824	0.90988	0.91149	0.91308	0.91466	0.91621	0.91774
+1.4	0.91924	0.92073	0.92220	0.92364	0.92507	0.92647	0.92785	0.92922	0.93056	0.93189
+1.5	0.93319	0.93448	0.93574	0.93699	0.93822	0.93943	0.94062	0.94179	0.94295	0.94408
+1.6	0.94520	0.94630	0.94738	0.94845	0.94950	0.95053	0.95154	0.95254	0.95352	0.95449
+1.7	0.95543	0.95637	0.95728	0.95818	0.95907	0.95994	0.96080	0.96164	0.96246	0.96327
+1.8	0.96407	0.96485	0.96562	0.96638	0.96712	0.96784	0.96856	0.96926	0.96995	0.97062
+1.9	0.97128	0.97193	0.97257	0.97320	0.97381	0.97441	0.97500	0.97558	0.97615	0.97670
+2.0	0.97725	0.97778	0.97831	0.97882	0.97932	0.97982	0.98030	0.98077	0.98124	0.98169
+2.1	0.98214	0.98257	0.98300	0.98341	0.98382	0.98422	0.98461	0.98500	0.98537	0.98574
+2.2	0.98610	0.98645	0.98679	0.98713	0.98745	0.98778	0.98809	0.98840	0.98870	0.98899
+2.3	0.98928	0.98956	0.98983	0.99010	0.99036	0.99061	0.99086	0.99111	0.99134	0.99158
+2.4	0.99180	0.99202	0.99224	0.99245	0.99266	0.99286	0.99305	0.99324	0.99343	0.99361
+2.5	0.99379	0.99396	0.99413	0.99430	0.99446	0.99461	0.99477	0.99492	0.99506	0.99520
+2.6	0.99534	0.99547	0.99560	0.99573	0.99585	0.99598	0.99609	0.99621	0.99632	0.99643
+2.7	0.99653	0.99664	0.99674	0.99683	0.99693	0.99702	0.99711	0.99720	0.99728	0.99736
+2.8	0.99744	0.99752	0.99760	0.99767	0.99774	0.99781	0.99788	0.99795	0.99801	0.99807
+2.9	0.99813	0.99819	0.99825	0.99831	0.99836	0.99841	0.99846	0.99851	0.99856	0.99861
+3.0	0.99865	0.99869	0.99874	0.99878	0.99882	0.99886	0.99889	0.99893	0.99896	0.99900
+3.1	0.99903	0.99906	0.99910	0.99913	0.99916	0.99918	0.99921	0.99924	0.99926	0.99929
+3.2	0.99931	0.99934	0.99936	0.99938	0.99940	0.99942	0.99944	0.99946	0.99948	0.99950
+3.3	0.99952	0.99953	0.99955	0.99957	0.99958	0.99960	0.99961	0.99962	0.99964	0.99965
+3.4	0.99966	0.99968	0.99969	0.99970	0.99971	0.99972	0.99973	0.99974	0.99975	0.99976
+3.5	0.99977	0.99978	0.99978	0.99979	0.99980	0.99981	0.99981	0.99982	0.99983	0.99983
+3.6	0.99984	0.99985	0.99985	0.99986	0.99986	0.99987	0.99987	0.99988	0.99988	0.99989
+3.7	0.99989	0.99990	0.99990	0.99990	0.99991	0.99991	0.99992	0.99992	0.99992	0.99992
+3.8	0.99993	0.99993	0.99993	0.99994	0.99994	0.99994	0.99994	0.99995	0.99995	0.99995
+3.9	0.99995	0.99995	0.99996	0.99996	0.99996	0.99996	0.99996	0.99996	0.99997	0.99997
+4.0	0.99997	0.99997	0.99997	0.99997	0.99997	0.99997	0.99998	0.99998	0.99998	0.99998



https://www.youtube.com/watch?v=UcZwyzwWU7o&t=944s

Chi Square Distribution Test of a Single Variance or Standard Deviation



https://www.youtube.com/watch?v=O6a76Dnn104