Hypothesis Testing about a Proportion Large Sample

52% of newborn babies are boys as claimed by pediatric doctors around the world. A sample of 1000 births indicate that 508 were boys. Use the 5% level of significance to test this claim.

TI-83 or TI-84 Plus Finding the z vaue corresponding to a known area.

1. Press **2nd** then **vars** to access DISTR (distributions) menu.

2. Select InvNorm and click enter.

3. Enter the area, mean μ , enter the standard deviation σ , tail.

4. Paste.

InvNorm area: 0.95 μ : 0 σ : 1 Tail: Center

Texas Instruments	TI-84 Plus CE	Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO REAL D	EGREE MP	NORMAL FLOAT AUTO REA	L DEGREE MP 🚺
invNorm area:.95 μ:0 σ:1 Tail: LEFT CENT Paste	IR RIGHT	invNorm(.95,0,1 {-1.959963986 1 ■	L,CENTER) L.959963986}
statplotf1tblsetf2formatf3y=windowzoom	calcf4tablef5tracegraph	statplotf1tblsetf2formaty=windowzoon	f3 calc f4 table f5 n trace graph



Compute your Test Statistic. Approximate your test statistic to the nearest hundredths.

TI-84 Plus CE

1. Press **STAT**, then select **TESTS** in the top menu.

2. Select 1-PropZTest in the menu and press ENTER.

3. Enter the claimed population proportion p_0 , number of successes x, sample size n. For prop select the format used for the alternate hypothesis.

TEXAS INSTRU	JMENTS	TI-84	Plus CE
NORMAL FLOAT	AUTO REAL	DEGREE M	IP 📋
1 ₽0:0.52 x:508 n:1000 Prop:≠P Color:	PropZT (P) SLUE Draw	est P0	
statplot f1 tblset	f2 format f ow zoom	f3 calc f4	table f5
Texas Instr	UMENTS	TI-84	Plus CE
TEXAS INSTR	uments I auto real	TI-84 DEGREE M	Plus CE
TEXAS INSTR NORMAL FLOAT Prop≠0. z= -0.75 p=0.447 p=0.508 n=1000	UMENTS T AUTO REAL 52 9554525 5207663	TI-84 DEGREE MI est 3	Plus CE

The proportion of college students who take a full load is not 40% as claimed by Professor Snodgrass. A sample of 420 college students reveal that 172 enrolled in at least 12-units (full load). Use the 10% level of significance to test this claim.

TI-83 or TI-84 Plus Finding the z vaue corresponding to a known area. 1. Press **2**nd then **vars** to access DISTR (distributions) menu. 2. Select **InvNorm** and click **enter**. 3. Enter the area, mean μ , enter the standard deviation σ , tail. 4. Paste. **InvNorm area: 0.90** μ : 0 σ : 1 Tail: Center

Texas Instruments	TI-84 Plus CE	Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO REAL D	EGREE MP	NORMAL FLOAT AUTO REAL	. DEGREE MP
invNorm area:.90 μ:0 σ:1 Tail: LEFT CENT	IR RIGHT	in∨Norm(.90,0,1 {-1.644853626 1 ■	., CENTER) 644853626}
statplotf1tblsetf2formatf3y=windowzoom	calc f4 table f5 trace graph	statplot f1 tblset f2 format y= window zoom	f3 calc f4 table f5 trace graph



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Approximate your test statistic to the nearest hundredths.

TI-84 Plus CE

1. Press STAT, then select TESTS in the top menu.

2. Select 1-PropZTest in the menu and press ENTER.

3. Enter the claimed population proportion p_0 , number of successes x, sample size n. For prop select the format used for the alternate hypothesis.

🐺 Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO REAI	L DEGREE MP
<u>1-PropZ</u> P0:0.4 x:172 n:420 Prop: ≠P0 (P0) Color: <u>BLUE</u> Draw	est >P0
statplot f1 tblset f2 format	f3 calc f4 table f5
y= window zoom	n trace graph
y= window zoom	TI-84 Plus CE
y= window zoom	TI-84 Plus CE
y= window zoom ✓ Texas Instruments NORMAL FLOAT AUTO REAL Prop≠0.4 z=0.3984095364 p=0.6903284199 p=0.4095238095 n=420	TI-84 Plus CE DEGREE MP

At least 64% of college students believe Big Foot is real as claimed by a Sociologists professor. A sample of 400 college students reveal that 252 believe Big Foot is real. Use the 1% level of significance to test this claim.

TI-83 or TI-84 Plus Finding the z vaue corresponding to a known area. 1. Press 2^{nd} then vars to access DISTR (distributions) menu. 2. Select **InvNorm** and click **enter**. 3. Enter the area, mean μ , enter the standard deviation σ , tail. 4. Paste. InvNorm area: 0.01 μ : 0 σ : 1 Tail: Left

Texas Instruments	TI-84 Plus CE	🐺 Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO REAL (DEGREE MP	NORMAL FLOAT AUTO REA	IL DEGREE MP
invNorm area:.01 μ:0 σ:1 Tail: LEFT CENT	ER RIGHT	in∨Norm(.01,0,:	1,LEFT) -2.326347877
statplot f1 tblset f2 format f3 y= window zoom	calc f4 table f5 trace graph	statplot f1 tblset f2 format	f3 calc f4 table f5 n trace graph



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Approximate your test statistic to the nearest hundredths.

TI-84 Plus CE

1. Press **STAT**, then select **TESTS** in the top menu.

2. Select 1-PropZTest in the menu and press ENTER.

3. Enter the claimed population proportion p_0 , number of successes x, sample size n. For prop select the format used for the alternate hypothesis.

Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO REAL	DEGREE MP 🚺
<mark>1-PropZTe</mark> P0:0.64 x:252 n:400 Prop:≢P0 <p0>p Color: BLUE Calculate Draw</p0>	≥st >0
statplot f1 tblset f2 format f3 y= window zoom	calc f4 table f5 trace graph
Texas Instruments	TI-84 Plus CE
VORMAL FLOAT AUTO REAL I	TI-84 Plus CE Degree MP
★ Texas Instruments NORMAL FLOAT AUTO REAL 1—PropZTe Prop≠0.64 z= -0.416666666667 p=0.6769223133 p=0.63 n=400	TI-84 Plus CE

The proportion of individuals who take the second dose of the Covid-19 vaccine is more than 92% as indicated by Public Health Officials. A sample of 1200 individuals who have taken the first does reveal that 998 received the second does. Use the 1% level of significance to test this claim.

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1. Press **2nd** then **vars** to access DISTR (distributions) menu.

2. Select InvNorm and click enter.

3. Enter the area, mean μ , enter the standard deviation σ , tail.

4. Paste.

InvNorm area: 0.01 μ : 0 σ : 1 Tail: Right

TEXAS INSTRUMENTS TI-84	Plus CE	🐳 Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO REAL DEGREE M	1P 🚺	NORMAL FLOAT AUTO REA	L DEGREE MP
invNorm area:.01 μ:0 σ:1 Tail: LEFT CENTER RI Paste	GHT	invNorm(.01,0,	1,RIGHT) 2.326347877
statplotf1tblsetf2formatf3calcf4y=windowzoomtrace	4 table f5 graph	statplotf1tblsetf2formaty=windowzoor	f3 calcf4 tablef5mtracegraph



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TI-84 Plus CE

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2. Select 1-PropZTest in the menu and press ENTER.

3. Enter the claimed population proportion p_0 , number of successes x, sample size n. For prop select the format used for the alternate hypothesis.

V Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO REAL	DEGREE MP
<u>1-PropZT</u> р0:0.92 x:998 n:1200 prop:≢Р0 <р0 > Color: <u>BLUE</u> Draw	est P0
statplot f1 tblset f2 format f y= window zoom	f3 calc f4 table f5 trace graph
🐺 Texas Instruments	TI-84 Plus CE
♣ Texas Instruments NORMAL FLOAT AUTO REAL	TI-84 Plus CE DEGREE MP
TEXAS INSTRUMENTS I-PropZI Prop≠0.92 z= -11.27914903 p=1.708073095 p=0.83166666667 n=1200	TI-84 Plus CE DEGREE MP

The proportion of college students that take 4-years to complete a bachelor's degree is no more than 12% as claimed by Campus Researchers. A sample of 500 college students indicate that 72 completed a bachelor's degree in 4 years. Use the 5% level of Significance to test this claim.

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2. Select InvNorm and click enter.

3. Enter the area, mean μ , enter the standard deviation σ , tail.

4. Paste.

InvNorm area: 0.05 μ : 0 σ : 1 Tail: Right

TI-84 Plus CE	TEXAS INSTRUMENTS TI-84 Plus CE
NORMAL FLOAT AUTO REAL DEGREE MP	NORMAL FLOAT AUTO REAL DEGREE MP
invNorm area:.05 μ:0 σ:1 Tail: LEFT CENTER RIGHT Paste	invNorm(.05,0,1,RIGHT) 1.644853626
statplot f1tblsetf2formatf3calcf4tablef5y=windowzoomtracegraph	statplotf1tblsetf2formatf3calcf4tablef5y=windowzoomtracegraph



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TI-84 Plus CE

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2. Select 1-PropZTest in the menu and press ENTER.

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🦊 Texas Instrument	S	TI-84	Plus CE
NORMAL FLOAT AUT	D REAL	DEGREE MI	Ì
<u>1-Pr</u> ₽0:0.12 x:72 n:500 Prop:≠P0 < Color: <u>B</u>	opZTe pø <u>Dp</u> UE Draw	est.	
statplot f1 tblset f2 f y= window	ormat f3 zoom	calc f4 trace	table f5 graph
🐺 Texas Instrument	S	TI-84	Plus CE
NORMAL FLOAT AUTO) REAL	DEGREE M	P 🚺
<u>1-Pro</u> prop>0.12 z=1.6514450 p=0.0493233 β=0.144 n=500	0PZTe 648 7876	st	
statplot f1 tblset f2 f y= window	ormat f3 zoom	calc f4 trace	table f5 graph

At least 35% of insomnia sufferers who are treated with Zopiclone have increased their sleep time significantly as claimed by a Drug Manufacturer. A sample of 120 Insomnia sufferers who were treated with Zopiclone indicate that 42 increased their sleep time significantly. Use the 10% level of significance to test this claim.

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2. Select InvNorm and click enter.

3. Enter the area, mean μ , enter the standard deviation σ , tail.

4. Paste.

InvNorm area: 0.10 μ : 0 σ : 1 Tail: left

TI-84 Plus CE	🐺 Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO REAL DEGREE MP	NORMAL FLOAT AUTO REF	NL DEGREE MP
invNorm area:.10 μ:0 σ:1 Tail: LEFT CENTER RIGHT Paste	in∨Norm(.10,0, ∎	1,LEFT) -1.281551567
statplot f1 tblset f2 format f3 calc f4 table f5 y= window zoom trace graph	statplot f1 tblset f2 format	f3 calc f4 table f5 m trace graph



Compute your Test Statistic.

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2. Select 1-PropZTest in the menu and press ENTER.

3. Enter the claimed population proportion p_0 , number of successes x, sample size n. For prop select the format used for the alternate hypothesis.

🜵 Texas Instruments	TI-84 Plus CE
NORMAL FLOAT AUTO R	EAL DEGREE MP 🚺
<u>1-Ргор</u> Р0:0.35 x:42 n:120 Prop:≠P0 КР0 Color: <u>BLU</u>	ZTest >p0 aw
statplot f1 tblset f2 form y= window zo	at f3 calc f4 table f5 om trace graph
🐺 Texas Instruments	TI-84 Plus CE
♣ Texas Instruments NORMAL FLOAT AUTO R	TI-84 Plus CE
TEXAS INSTRUMENTS NORMAL FLOAT AUTO R 1-Prop Prop<0.35	TI-84 Plus CE EAL DEGREE MP I ZTest