Groups 1-2: Marathon

Sample: 180 runners from a marathon
Group 1 variable: Each runner's age (*age*), measured in years
Group 2 variable: Each runner's time (*time*), measured in minutes

Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
age	180	36.69	.647	8.687
time	180	384.61	2.898	38.879
Valid N (listwise)	180			

Group 1 T-Test: *age* (test value = 30)

A new sports drink is targeting people around 30 years old as its consumers. Is it a good strategy to sponsor this marathon in the future and run its major marketing campaign there?

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
age	180	36.69	8.687	.647

One-Sample Test

	Test Value = 30						
			Significance		Mean Difference	95% Confidence Interval of the Difference	
	t	df	One-Sided p	Two-Sided p		Lower	Upper
age	10.331	179	<.001	<.001	6.689	5.41	7.97

One-Sample Effect Sizes

				95% Confidence Interval	
		Standardizer [a]	Point Estimate	Lower	Upper
age	Cohen's d	8.687	.770	.603	.936
	Hedges' correction	8.723	.767	.600	.932

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

Groups 1-2: Marathon

Sample: 180 runners from a marathon
Group 1 variable: Each runner's age (*age*), measured in years
Group 2 variable: Each runner's time (*time*), measured in minutes

Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
age	180	36.69	.647	8.687
time	180	384.61	2.898	38.879
Valid N (listwise)	180			

Group 2 T-Test: *time* (test value = 390)

The expectation for runners from this age group is to finish this marathon route in about 6.5 hours (390 minutes). Did the runners from this marathon perform as expected?

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
time	180	384.61	38.879	2.898

One-Sample Test

	Test Value = 390						
			Significance		Mean Difference	95% Confidence Interval of the Difference	
	t	df	One-Sided p	Two-Sided p		Lower	Upper
time	-1.860	179	.032	.065	-5.389	-11.11	.33

One-Sample Effect Sizes

				95% Confidence Interval	
		Standardizer [a]	Point Estimate	Lower	Upper
time	Cohen's d	38.879	-.139	-.285	.008
	Hedges' correction	39.043	-.138	-.284	.008

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

Groups 3-4: Albuquerque home

Sample: 68 new homes in Albuquerque on the market

Group 3 variable: Each new home's living space square footage (*sqft*), measured in square feet

Group 4 variable: Each new home's selling price (*price*), measured in $1,000

Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
sqft	68	1746.34	61.506	507.195
price	68	256.067	10.7521	88.6640
Valid N (listwise)	68			

Group 3 T-Test: *sqft* (test value = 1600)

A realtor has estimated the optimal size for first-time home buyers to be 1600 square feet. According to this suggestion, is Albuquerque a housing market best suited for first-time home buyers?

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
sqft	68	1746.34	507.195	61.506

One-Sample Test

	Test Value = 1600						
			Significance		Mean Difference	95% Confidence Interval of the Difference	
	t	df	One-Sided p	Two-Sided p		Lower	Upper
sqft	2.379	67	.010	.020	146.338	23.57	269.11

One-Sample Effect Sizes

				95% Confidence Interval	
		Standardizer [a]	Point Estimate	Lower	Upper
sqft	Cohen's d	507.195	.289	.045	.530
	Hedges' correction	512.962	.285	.044	.524

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

Groups 3-4: Albuquerque home

Sample: 68 new homes in Albuquerque on the market

Group 3 variable: Each new home's living space square footage (*sqft*), measured in square feet

Group 4 variable: Each new home's selling price (*price*), measured in $1,000

Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
sqft	68	1746.34	61.506	507.195
price	68	256.067	10.7521	88.6640
Valid N (listwise)	68			

Group 4 T-Test: *price* (test value = 300)

A sunroom company believes that homeowners from $300K houses are most likely to spend money to build a sunroom. Would Albuquerque be a lucrative market for this sunroom company?

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
price	68	256.067	88.6640	10.7521

One-Sample Test

	Test Value = 300						
			Significance			95% Confidence Interval of the Difference	
	t	df	One-Sided p	Two-Sided p	Mean Difference	Lower	Upper
price	-4.086	67	<.001	<.001	-43.9329	-65.394	-22.472

One-Sample Effect Sizes

				95% Confidence Interval	
		Standardizer [a]	Point Estimate	Lower	Upper
price	Cohen's d	88.6640	-.495	-.746	-.242
	Hedges' correction	89.6722	-.490	-.737	-.239

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

Groups 5-6: Baby

Sample: 189 newborn babies, followed up for 20 months

Group 5 variable: Each newborn baby's weight (*newborn_weight*), measured in lb

Group 6 variable: Each baby's age when the first word is spoken (*first_word*), measured in months

Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
newborn_weight	189	6.546	.1093	1.5025
first_word	189	12.58	.170	2.343
Valid N (listwise)	189			

Group 5 T-Test: *newborn_weight* (test value = 7.5)

A onesie is designed to fit 7.5-lb babies. Would it be a good fit for the babies in this sample?

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
newborn_weight	189	6.546	1.5025	.1093

One-Sample Test

	Test Value = 7.5						
			Significance		Mean Difference	95% Confidence Interval of the Difference	
	t	df	One-Sided p	Two-Sided p		Lower	Upper
newborn_weight	-8.729	188	<.001	<.001	-.9540	-1.170	-.738

One-Sample Effect Sizes

				95% Confidence Interval	
		Standardizer [a]	Point Estimate	Lower	Upper
newborn_weight	Cohen's d	1.5025	-.635	-.791	-.478
	Hedges' correction	1.5086	-.632	-.787	-.476

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.

Groups 5-6: Baby

Sample: 189 newborn babies, followed up for 20 months
Group 5 variable: Each newborn baby's weight (*newborn_weight*), measured in lb
Group 6 variable: Each baby's age when the first word is spoken (*first_word*), measured in months

Descriptive Statistics

	N	Mean		Std. Deviation
	Statistic	Statistic	Std. Error	Statistic
newborn_weight	189	6.546	.1093	1.5025
first_word	189	12.58	.170	2.343
Valid N (listwise)	189			

Group 6 T-Test: *first_word* (test value = 12)

New parents often expect their babies to utter the first word at around 12 months of age. Did the babies from the sample data agree with this general timeline?

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
first_word	189	12.58	2.343	.170

One-Sample Test

Test Value = 12

	t	df	Significance		Mean Difference	95% Confidence Interval of the Difference	
			One-Sided p	Two-Sided p		Lower	Upper
first_word	3.415	188	<.001	<.001	.582	.25	.92

One-Sample Effect Sizes

				95% Confidence Interval	
		Standardizer [a]	Point Estimate	Lower	Upper
first_word	Cohen's d	2.343	.248	.103	.393
	Hedges' correction	2.352	.247	.103	.391

a. The denominator used in estimating the effect sizes.
Cohen's d uses the sample standard deviation.
Hedges' correction uses the sample standard deviation, plus a correction factor.