

R code

Distribution	To find probability (need to find P-value in hypothesis testing)	To find a quantile (need to find z/t multiplier when constructing (1-alpha)100% confidence interval)
Standard normal distribution (p, p1-p2)	Cases: Ha: $p < p_0$, $p_1 < p_2$ <code>pnorm(test statistic)</code> Ha: $p > p_0$, $p_1 > p_2$ <code>1-pnorm(test statistic)</code> or <code>pnorm(test statistic, lower=F)</code> Ha: $p \neq p_0$, $p_1 \neq p_2$ <code>2*(1-pnorm(test statistic))</code> or <code>2*pnorm(test statistic , lower=F)</code>	<code>qnorm(1-α/2)</code> or <code>qnorm(α/2, lower=F)</code> Both ways generate the same number
t-distribution (mu, mu1-mu2)	Cases: Ha: $\mu < \mu_0$, $\mu_1 < \mu_2$, $\mu_D < 0$ <code>pt(test statistic, df= df*)</code> Ha: $>$ <code>1-pt(test statistic, df=df*)</code> or <code>pt(test statistic, df= df*, lower=F)</code> Ha: $\neq$ <code>2* (1-pt(test statistic))</code> or <code>2*pt(test statistic , df= df*, lower=F)</code> where df*= <code>n-1</code>(one-sample) <code>smaller of (n1-1,n2-1)</code> (two-sample) <code>nD-1</code> (matched pair test where nD is the number of pairs) <code>n-2</code> (simple linear regression) <code>n-k-1</code> (multiple regression)	<code>qt(1-α/2, df=df*)</code> or <code>qt(α/2, df=df*, lower=F)</code> Both ways generate the same number. where df*= <code>n-1</code>(one-sample) <code>smaller of (n1-1,n2-1)</code> (two-sample) <code>nD-1</code> (matched pair test where nD is the number of pairs) <code>n-2</code> (simple linear regression) <code>n-k-1</code> (multiple regression)
F	<code>pf(test statistic, df1= g-1, df2=N-g, lower=F)</code>	
χ^2	<code>pchisq(test statistic, df=(r-1)*(c-1), lower=F)</code>	

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