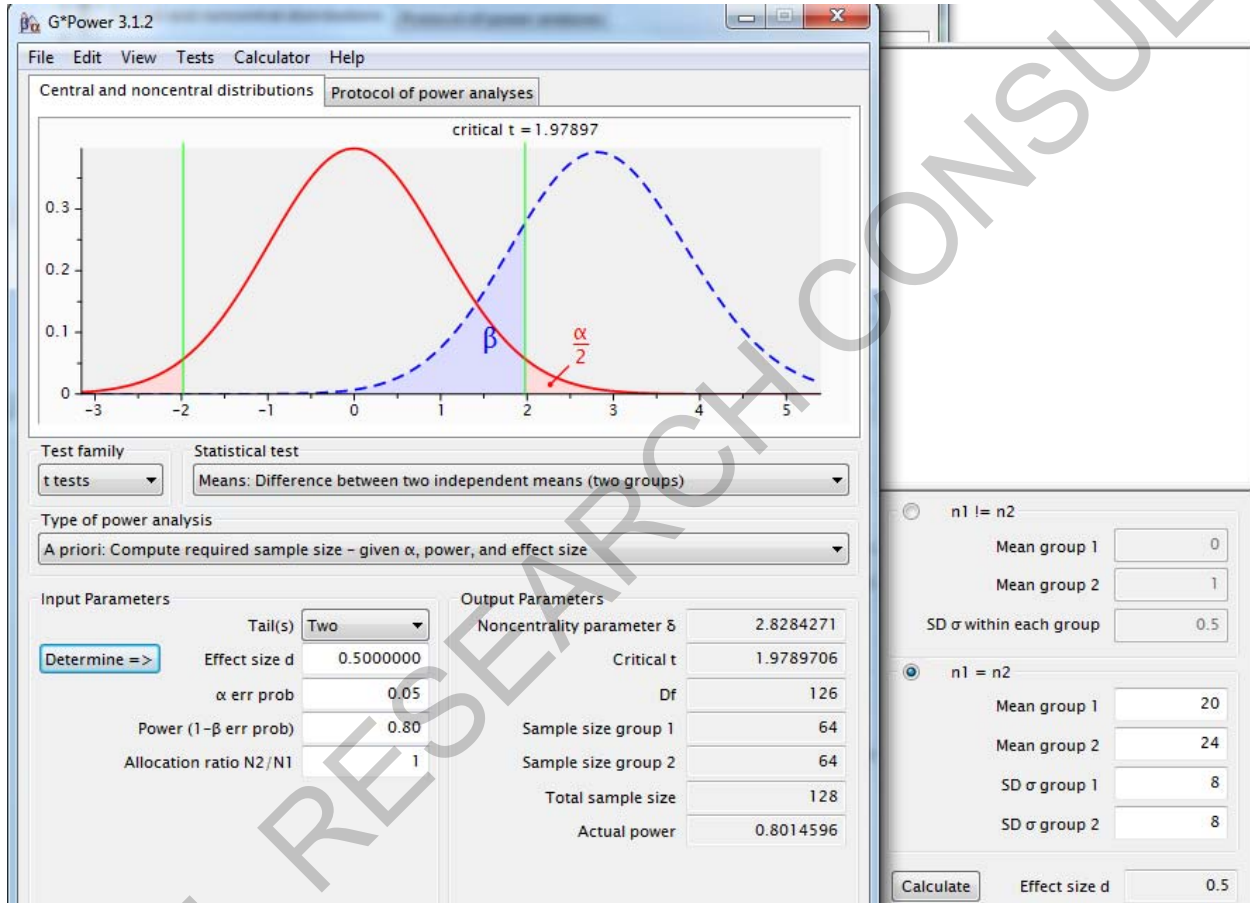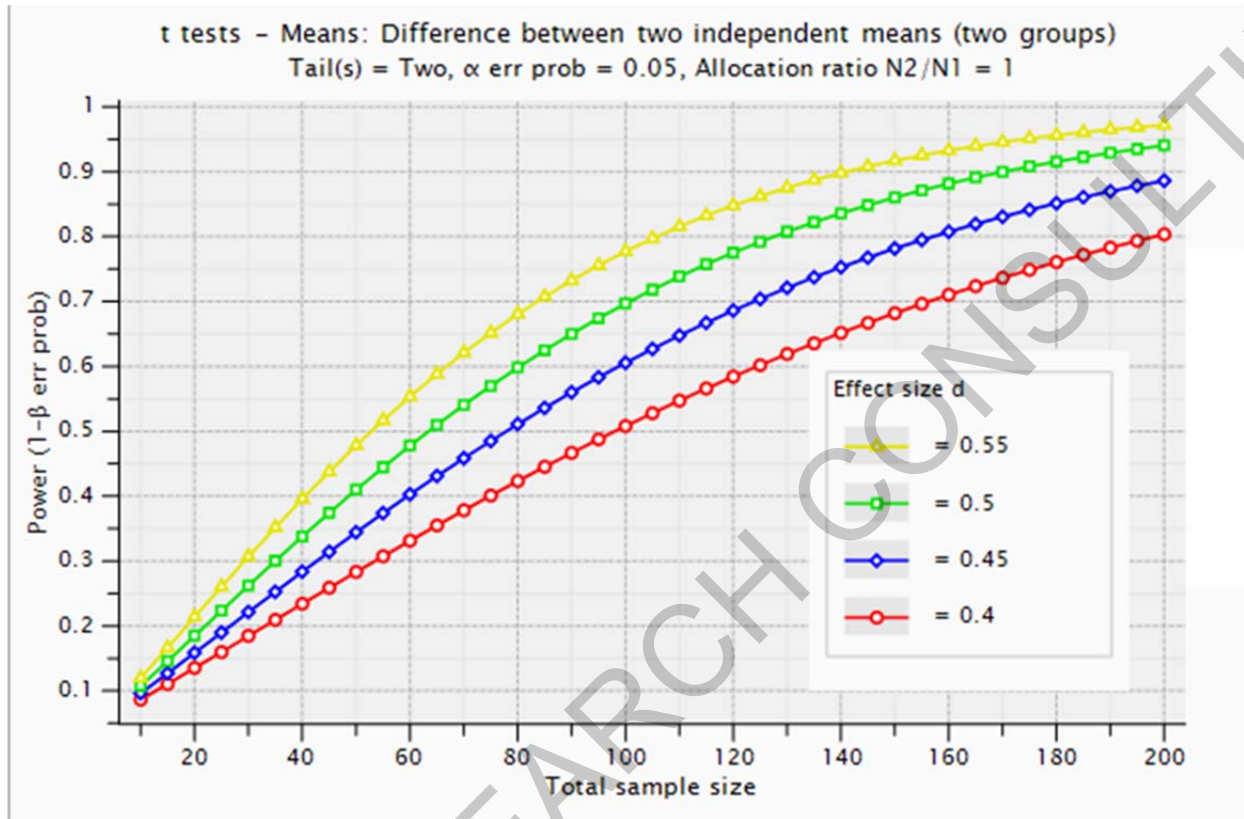# Examples of power estimates

ASSUMPTIONS: Mean (SD) group 1 = 20 (8.0), Mean (SD) group 2 = 24 (8.0)

QUESTION: What sample size is sufficient for a two-tail test (alpha = 0.05) with power =0.80 to be able to statistically detect an increase of 4 points in the scale?

Provide a plot of various effect sizes for 0.4 to 0.55 with a allocation ratio of 1:1

t tests – Means: Difference between two independent means (two groups)
Tail(s) = Two, α err prob = 0.05, Allocation ratio N2/N1 = 1

Effect size d
= 0.55
= 0.5
= 0.45
= 0.4

Provide a plot of various effect sizes for 0.4 to 0.55 with a allocation ratio of 1:1.5

Input Parameters			Output Parameters	
Tail(s)	Two		Noncentrality parameter δ	2.8389613
Determine => Effect size d	0.5000000		Critical t	1.9780988
α err prob	0.05		Df	132
Power (1−β err prob)	0.80		Sample size group 1	54
Allocation ratio N2/N1	1.5		Sample size group 2	80
			Total sample size	134
			Actual power	0.8046333

t tests – Means: Difference between two independent means (two groups)
Tail(s) = Two, α err prob = 0.05, Allocation ratio N2/N1 = 1.5

Effect size d
= 0.55
= 0.5
= 0.45
= 0.4