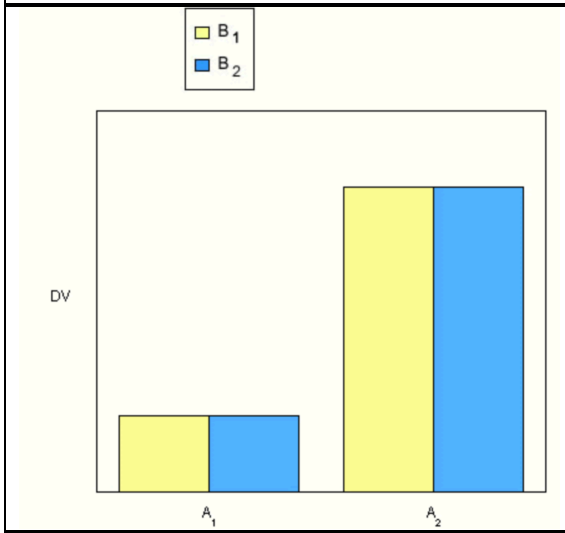
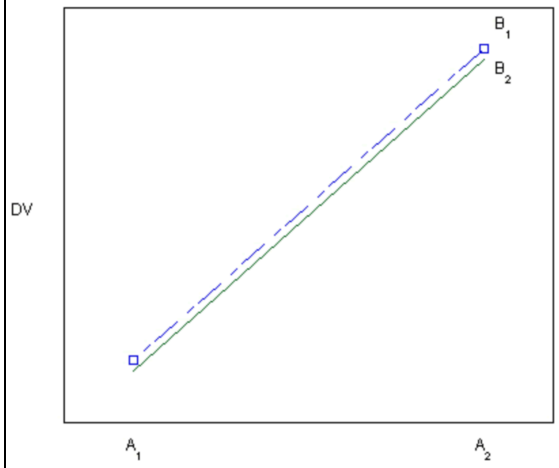
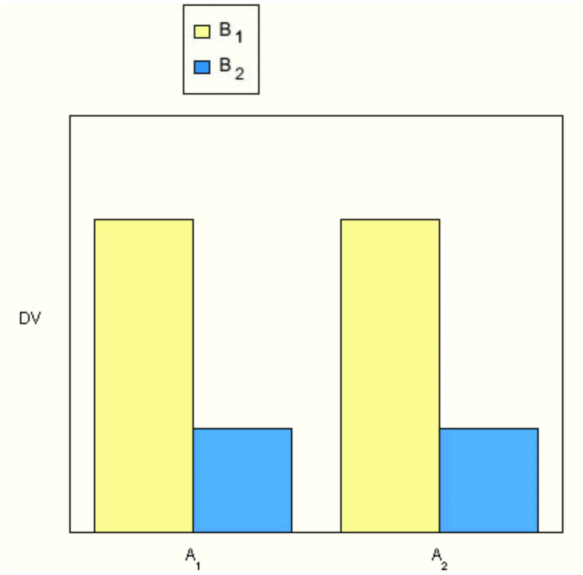
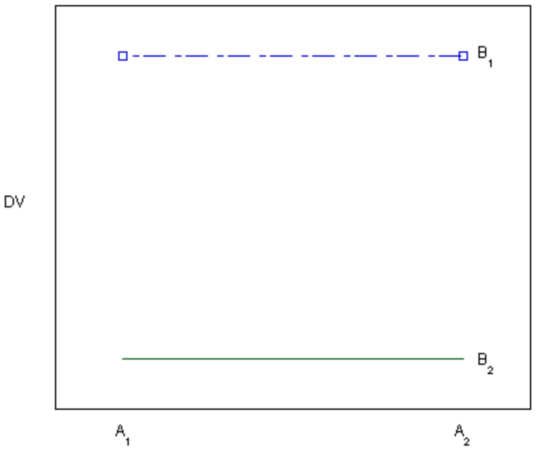
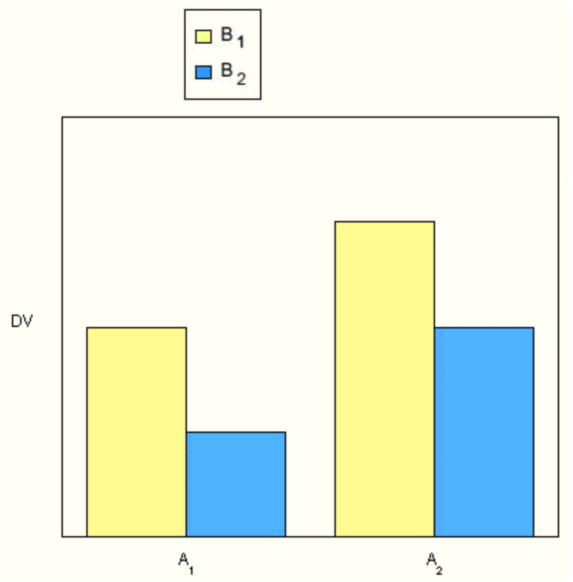
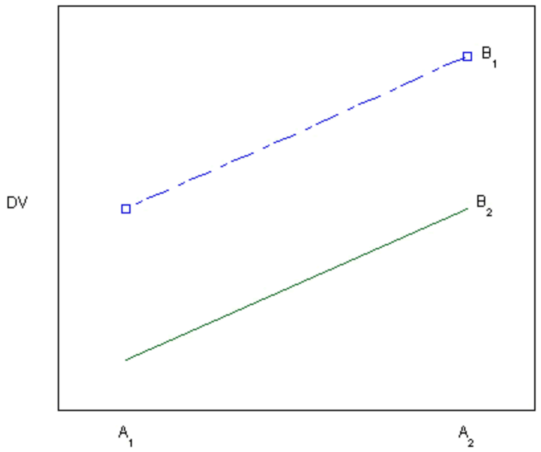
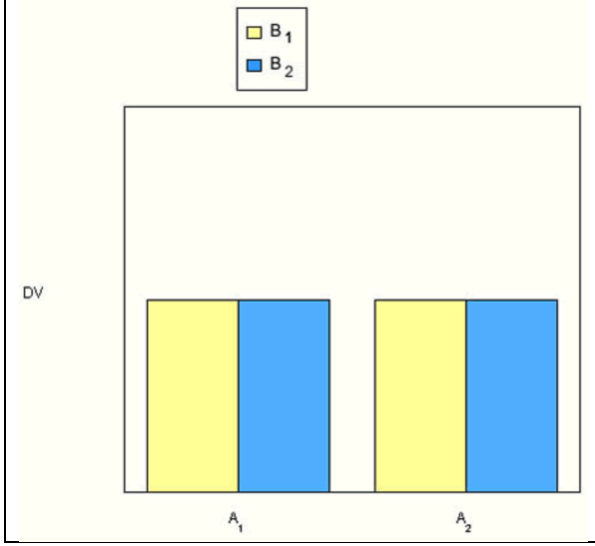
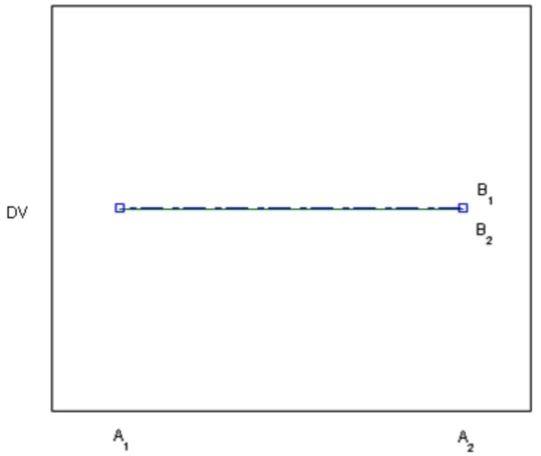
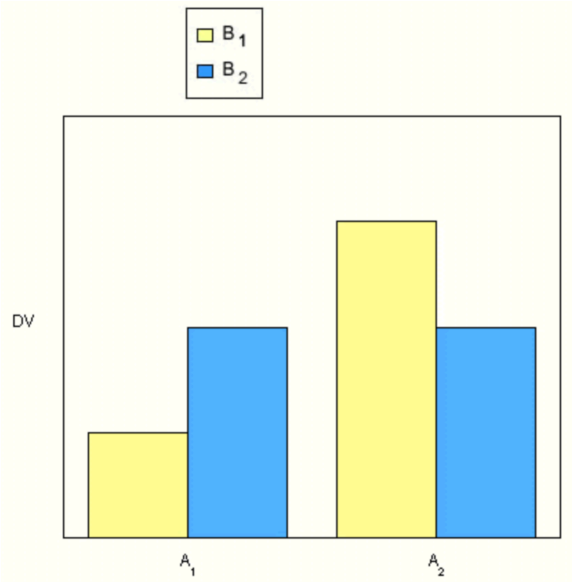
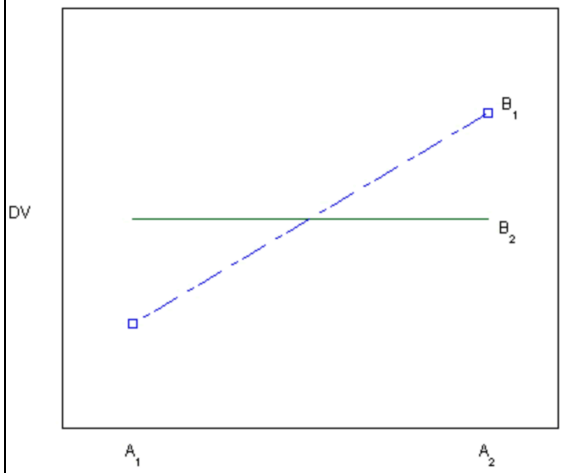
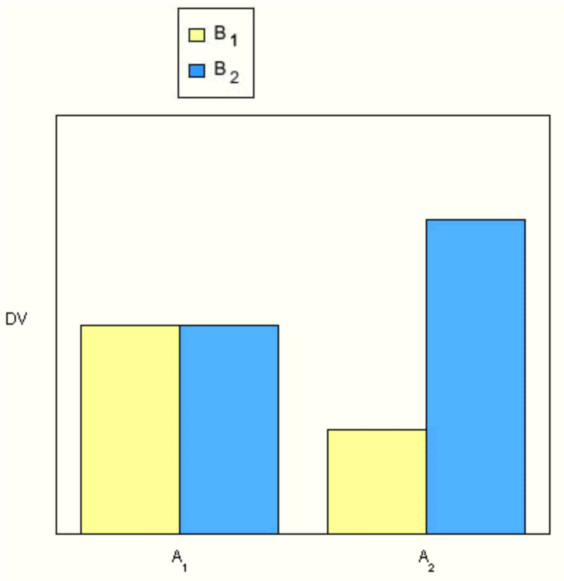
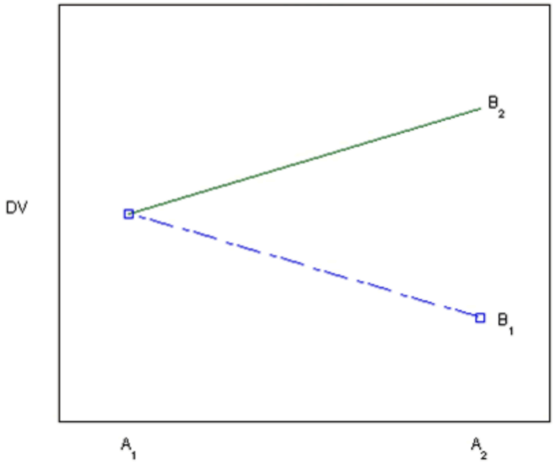
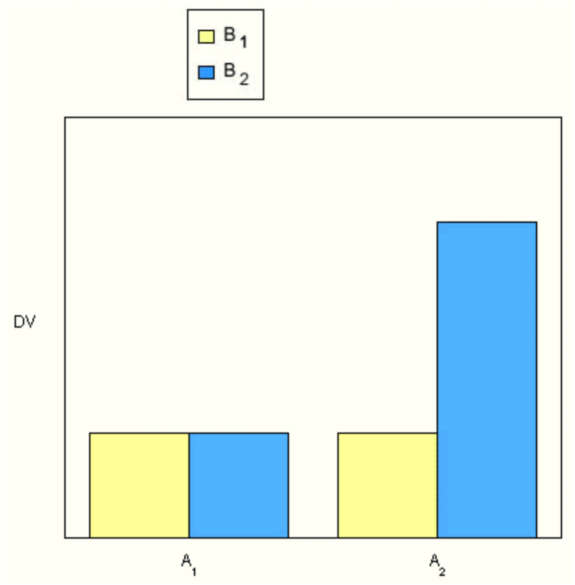
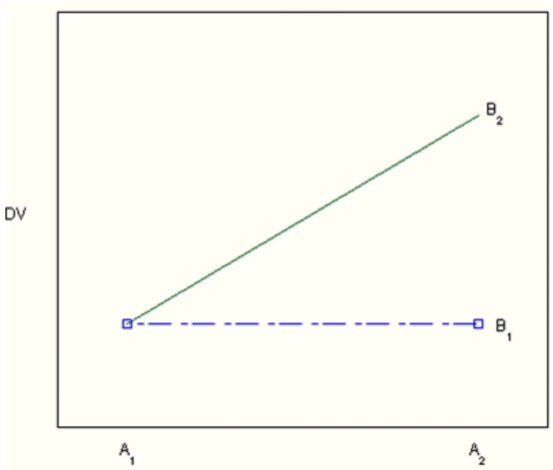
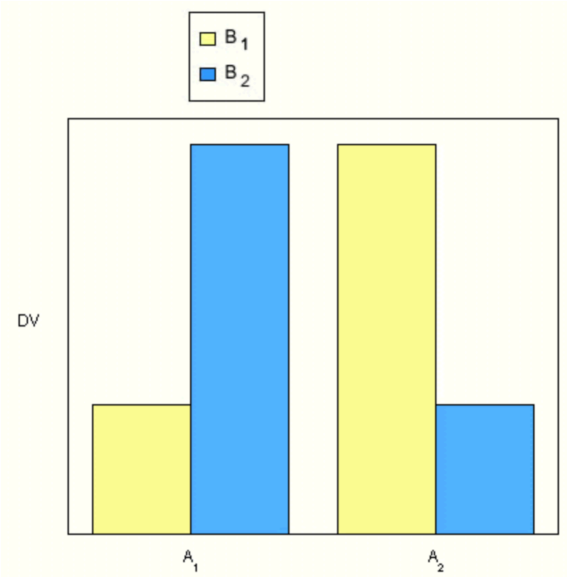
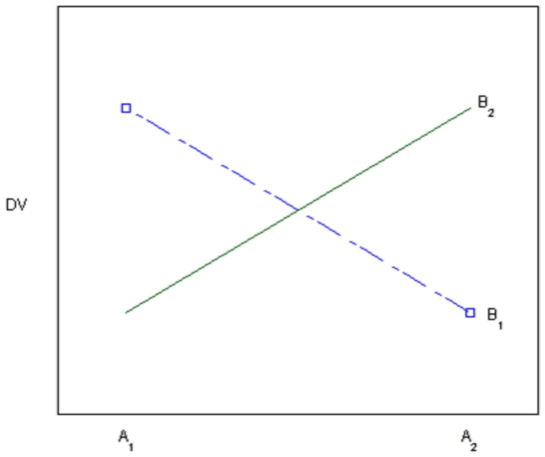
Practice: Main Effects & Interactions

Bar Graph of Data	Line Graph of Data	Effects Observed	Example Experiment
		• Main effect of IV A: **Yes** *People who consumed 200 mg of caffeine had a faster heart rate than people who consumed 0 mg of caffeine.* • Main effect of IV B: **No** *There was no effect of major on heart rate.* • A X B Interaction: **No** *The effect of caffeine intake on heart rate did not depend on major.*	• IV A: **Caffeine** ○ A_1: *0 mg* ○ A_2: *200 mg* • (Pseudo-)IV B: **Major** ○ B_1: *Psychology* ○ B_2: *English* • DV: **Heart rate**
		• Main effect of IV A: **No** *There was no effect of caffeine intake on behavioral research methods knowledge.* • Main effect of IV B: **Yes** *Psychology majors had more behavioral research methods knowledge than English majors.* • A X B Interaction: **No** *The methods knowledge of Psychology and English majors did not depend on their caffeine intake.*	• IV A: **Caffeine** ○ A_1: *0 mg* ○ A_2: *200 mg* • (Pseudo-)IV B: **Major** ○ B_1: *Psychology* ○ B_2: *English* • DV: **Behavioral research methods knowledge**

		• Main effect of IV A: **Yes** *People who consumed 200 mg of caffeine had a faster heart rate than people who consumed 0 mg of caffeine.* • Main effect of IV B: **Yes** *People who ran for 15 min had a higher heart rate than people who sat for 15 min.* • A X B Interaction: **No** *The effect of caffeine intake on heart rate did not depend on exercise, nor vice versa (they had additive, not interactive, effects).*	• IV A: **Caffeine** ○ A_1: *0 mg* ○ A_2: *200 mg* • IV B: **Exercise** ○ B_1: *Run for 15 min* ○ B_2: *Sit for 15 min* • DV: **Heart rate**
		• Main effect of IV A: **No** *There was no effect of caffeine on shoe size.* • Main effect of IV B: **No** *There was no effect of exercise on shoe size.* • A X B Interaction: **No** *The effect of caffeine on shoe size did not depend on exercise, nor vice versa.*	• IV A: **Caffeine** ○ A_1: *0 mg* ○ A_2: *200 mg* • IV B: **Exercise** ○ B_1: *Run for 15 min* ○ B_2: *Sit for 15 min* • DV: **Shoe size**

		• Main effect of IV A: **Yes** *People with fast wifi took less time to find definitions on average.* • Main effect of IV B: **No** *There was no effect of using an online vs. physical dictionary on time taken to find definitions on average.* • A X B Interaction: **Yes** *The effect of using an online vs. physical dictionary on time taken to find definitions depended on whether there was fast or slow wifi. When there was fast wifi, people took less time to find definitions with the online dictionary than the physical dictionary. When there was slow wifi, people took more time to find definitions with the online dictionary than the physical dictionary.* *(OR: The effect of wifi depended on whether participants were using an online or physical dictionary – wifi speed only affected time taken to find definitions when using an online, not physical, dictionary)*	• IV A: **Internet connectivity** ○ A_1: *Fast wifi* ○ A_2: *Slow wifi* • IV B: **Dictionary type** ○ B_1: *Online dictionary* ○ B_2: *Physical dictionary* • DV: **Time taken to find definition of word**

		• Main effect of IV A: **No** *There was no effect of age on time taken to find definitions on average.* • Main effect of IV B: **Yes** *People took less time to find definitions using the physical dictionary than the online dictionary on average.* • A X B Interaction: **Yes** *The effect of dictionary type depended on age. 60-year-olds took the same amount of time to find definitions when using an online or physical dictionary. 20-year-olds were faster than 60-year-olds when using an online dictionary, but slower when using a physical dictionary.*	• (Pseudo-)IV A: **Age** ○ A_1: 60-year-olds ○ A_2: 20-year-olds • IV B: **Dictionary type** ○ B_1: *Online dictionary* ○ B_2: *Physical dictionary* • DV: **Time taken to find definition of word**

		• Main effect of IV A: **Yes** *On average, people danced more when there was a great band than when there was a bad band.* • Main effect of IV B: **Yes** *On average, people who liked dancing danced more than people who did not.* • A X B Interaction: **Yes** *People who liked dancing danced more than people who didn't like dancing when there was a great band, but both groups danced the same amount (not very much) when there was a bad band.*	• IV A: **Party band quality** ○ A_1: *Bad band* ○ A_2: *Great band* • (Pseudo-)IV B: **Dancing preference** ○ B_1: *Does not like dancing* ○ B_2: *Likes dancing* • DV: **Amount of time spent dancing at party**
		• Main effect of IV A: **No** *The band style did not affect amount of time spent dancing on average.* • Main effect of IV B: **No** *There was no difference in dancing between people with Top 40 vs. Jazz dancing preferences on average.* • A X B Interaction: **Yes** *The effect of band style on amount of time spent dancing depended on dancing preference. People who liked dancing to*	• IV A: **Party band style** ○ A_1: *Jazz* ○ A_2: *Top 40* • (Pseudo-)IV B: **Dancing preference** ○ B_1: *Likes dancing to Top 40* ○ B_2: *Likes dancing to jazz* • DV: **Amount of time spent dancing at party**

		Top 40 music danced more when the band played top 40 music when it played jazz, and people who liked dancing to jazz danced more to jazz music than when it played Top 40 music.	