

**Cross-Subject Answering-Reasoning Diff-in-Means
Cosine Similarity (Layer 20)**

Subject



MMLU Subject Average	0.58	0.59	0.53	0.93	0.93	0.9	0.9	0.88	0.88	0.86	0.84	0.8	
MMLU Abstract Algebra	0.58		0.68	0.67	0.37	0.4	0.34	0.34	0.34	0.36	0.35	0.35	0.55
MMLU College Mathematics	0.59	0.68		0.62	0.39	0.38	0.33	0.34	0.35	0.38	0.39	0.37	0.53
GSM8K	0.53	0.67	0.62		0.37	0.38	0.32	0.32	0.33	0.36	0.35	0.32	0.58
MMLU Miscellaneous	0.93	0.37	0.39	0.37		0.94	0.93	0.91	0.88	0.84	0.81	0.81	0.68
MMLU Marketing	0.93	0.4	0.38	0.38	0.94		0.92	0.92	0.88	0.84	0.8	0.76	0.66
MMLU Sociology	0.9	0.34	0.33	0.32	0.93	0.92		0.95	0.9	0.82	0.78	0.75	0.63
MMLU Philosophy	0.9	0.34	0.34	0.32	0.91	0.92	0.95		0.9	0.82	0.77	0.73	0.62
MMLU High School US History	0.88	0.34	0.35	0.33	0.88	0.88	0.9	0.9		0.82	0.75	0.72	0.63
MMLU Professional Law	0.88	0.36	0.38	0.36	0.84	0.84	0.82	0.82	0.82		0.78	0.76	0.64
MMLU College Computer Science	0.86	0.35	0.39	0.35	0.81	0.8	0.78	0.77	0.75	0.78		0.81	0.64
MMLU College Chemistry	0.84	0.35	0.37	0.32	0.81	0.76	0.75	0.73	0.72	0.76	0.81		0.66
MMLU College Physics	0.8	0.55	0.53	0.58	0.68	0.66	0.63	0.62	0.63	0.64	0.64	0.66	

Subject

MMLU Subject Average
MMLU Abstract Algebra
MMLU College Mathematics
GSM8K
MMLU Miscellaneous
MMLU Marketing
MMLU Sociology
MMLU Philosophy
MMLU High School US History
MMLU Professional Law
MMLU College Computer Science
MMLU College Chemistry
MMLU College Physics