

Table 11: BBH task-wise instructions found by prompt optimization with the PaLM 2-L scorer and the gpt-3.5-turbo optimizer. The optimizations start from the empty string.

Task	Our Instruction
boolean_expressions	An accurate evaluation of logical expressions involves correctly applying Boolean operators, considering the order of operations, and analyzing the truth values of the operands in accordance with Boolean logic principles.
causal_judgement	Understanding causality is critical for accurately assessing cause and effect relationships in various scenarios, leading to well-informed judgments, precise conclusions, and definitive answers to questions about the outcomes involved.
date_understanding	What is the specific date mentioned or required in each given problem or question, taking into account all relevant information, available options, and the provided context? Please provide the accurate answer in the format MM/DD/YYYY.
disambiguation_qa	Accurately analyze and clarify the pronoun-antecedent relationship in the given sentences, identifying the appropriate referent to eliminate any potential confusion or ambiguity and ensure a precise understanding of the intended meaning.
dyck_languages	Solve the sequence by properly closing the parentheses.
formal_fallacies	In determining the deductive validity of arguments based on explicit premises, a meticulous analysis of the logical relationships and implications is essential for definitively establishing their soundness, confirming their validity or invalidity, and ensuring a reliable and robust assessment of the arguments at hand.
geometric_shapes	The SVG path element with the "d" attribute plays a crucial role in web development, allowing for the precise definition and rendering of various shapes on a webpage.
hyperbaton	Understanding the correct order of adjectives is crucial for constructing grammatically accurate and coherent sentences that effectively convey the intended meaning in diverse contexts while ensuring clarity, cohesion, and consistency throughout consistently and effortlessly.
logical_deduction_seven_objects	By conducting a meticulous analysis of the given information and ensuring logical consistency within each paragraph, we can accurately determine the precise order or ranking of the mentioned objects, allowing us to confidently and consistently identify the correct answer in every presented scenario with utmost precision and confidence.
movie_recommendation	Which movie option from the given choices closely matches the mentioned films in terms of themes, storylines, and characteristics, guaranteeing the highest possible similarity score among them all?
multistep_arithmetic_two	Evaluate the given mathematical expressions step by step to determine the correct solutions accurately.
navigate	Is it possible to determine, with absolute certainty, whether strictly adhering to the given instructions will unfailingly bring you back to the original starting point without any exceptions, errors, or deviations?
object_counting	Determine the total number of objects or entities mentioned in the given list, covering various categories and types, to accurately calculate the overall count.
penguins_in_a_table	From the given table, what information can we gather about the mentioned animals and their respective attributes, including names, ages, heights, and weights?
reasoning_about_colored_objects	By thoroughly examining the given information, accurately determine the answers for each question by considering the specific characteristics, colors, and positions of the mentioned objects.
ruin_names	Select the most amusing and clever alteration from the options provided for the given artist, movie, or title name, and accurately choose the correct answer to test your wit and creativity.
salient_translation_error_detection	Thoroughly examine the given translations from German to English and accurately identify any errors by carefully analyzing the text and selecting the appropriate option with meticulous attention to detail, precision, utmost accuracy, and comprehensive understanding of the language for precise evaluation and categorization.
snarks	Which option delivers the most devastatingly sarcastic response, brilliantly exposing the sheer absurdity and leaving absolutely no doubt whatsoever in all the given situations?
sports_understanding	Maintaining the accuracy, reliability, and integrity of sports event representation is essential for upholding the highest standards of credibility, trustworthiness, and overall quality in conveying information, without any compromise, misrepresentation, or distortion, thereby ensuring the factual accuracy of sports journalism.
temporal_sequences	Based on the provided timeline and observed activities, we can accurately determine the possible time range when each individual could have visited their intended destinations and answer questions about their visitation time.
tracking_shuffled_objects_seven_objects	An important point to note is that each person in the group starts with one specific book at the beginning of the semester.
web_of_lies	Analyzing the consistency and accuracy of statements provided by each person is crucial for determining the truthfulness of individuals in every scenario.
word_sorting	Please sort the given words in alphabetical order: The list of words to be sorted contains -

Table 12: BBH task-wise Q_begin instructions found by prompt optimization with the `text-bison` scorer and the `gpt-3.5-turbo` optimizer. The optimizations start from the empty string.

Task	Our Instruction
boolean_expressions	Group sub-expressions with parentheses to accurately evaluate logical operations: not, and, and finally or. Determine the resulting value as either True or False.
causal_judgement	Consider the intentions and actions of the individuals involved.
date_understanding	Determine the one-day difference in the given date and express it in the format MM/DD/YYYY.
disambiguation_qa	Determine the precise antecedent of the pronoun in the given sentence and select the correct option or state if it is ambiguous.
dyck_languages	Ensure that all opening brackets have a corresponding closing bracket, and that the closing brackets are in the correct order.
formal_fallacies	Thoroughly analyze the explicitly provided premises and determine the deductive validity of the argument based on all necessary conditions, implications, exclusions, and dependencies given.
geometric_shapes	Analyze the given SVG path element carefully and confidently select the correct option from the provided choices to accurately determine the corresponding shape. Pay close attention to the specific path details and confidently make the most suitable choice.
hyperbaton	Select the sentence that strictly adheres to the standard order of adjectives: opinion, size, age, shape, color, origin, material, and purpose. Ensure there are no deviations or alterations in the adjective order. Choose the option without any changes.
logical_deduction_seven_objects	Analyze the given information to accurately determine the precise order and ranking of the mentioned objects/people, considering their relationships, positions, and any provided comparisons, for a definitive and logical progression with maximum accuracy and efficiency.
movie_recommendation	Based on the movie list provided, carefully consider your preferences and make a well-informed decision.
multistep_arithmetic_two	First, simplify any expressions within parentheses following the correct order of operations to accurately evaluate the final answer with efficiency and precision.
navigate	Always face forward. Take 10 steps forward. Turn left. Take 5 steps forward. Take 3 steps backward. Finally, take 7 steps forward. Turn around and take 1 step forward. Repeat the previous sequence three times. Follow the given path precisely without any deviations. At the end, turn right and take 11 steps forward. If you follow these instructions, will you return to the starting point? Options: - Yes - No
object_counting	Determine the total count of mentioned vegetables accurately and state the final count as the answer.
penguins_in_a_table	Analyze the given table to accurately determine the required information based on the provided criteria and attributes of the penguins and giraffes. Utilize efficient problem-solving strategies to arrive at the correct answer.
reasoning_about_colored_objects_ruin_names	State the color of the object mentioned in the given arrangement with utmost accuracy. Choose the option that offers the most clever and humorous alteration of the given artist or movie name. Let your creativity shine and select the answer that will undoubtedly bring a smile to your face! Make sure to think outside the box!
salient_translation_error_detection	Analyze the translation and accurately identify the specific error type based on the source text, providing the most appropriate corresponding option.
snarks	Choose the option that wickedly embodies sarcasm.
sports_understanding	Determine the plausibility of the given statement by evaluating factual accuracy, logical consistency, and contextual relevance, then provide a succinct and well-justified response.
temporal_sequences	Identify the optimal time slot for the individual to engage in the mentioned location/activity considering the given sightings and waking up time, taking into account the opening and closing times of the location and the duration of each event.
tracking_shuffled_objects_seven_objects	Pay attention to the given information and track the swaps/exchanges carefully to accurately determine the final possession/position/outcome for the specified individual.
web_of_lies	To determine the truthfulness of the last person mentioned, analyze the consistency of each statement and count the number of individuals accusing the previous person of lying. If the count of accusers is even, that person tells the truth; if it is odd, that person lies.
word_sorting	Alphabetically sort the given list of words, ensuring all words are included and in ascending order.

Table 13: BBH task-wise Q_end instructions found by prompt optimization with the `text-bison` scorer and the `gpt-3.5-turbo` optimizer. The optimizations start from the empty string.

Task	Our Instruction
boolean_expressions	Accurately use order of operations and parentheses to evaluate logical expressions and determine truth values efficiently.
causal_judgement	Consider all relevant factors, prioritize overall well-being and ethical considerations, make well-informed decisions while foreseeing potential consequences efficiently, and consistently strive for optimal outcomes with empathy and adaptability in a thoughtful and comprehensive manner.
date_understanding	Subtract the specified number of days from the given date and format the outcome as MM/DD/YYYY to accurately determine the desired result in an efficient manner.
disambiguation_qa	Clearly identify and select the unambiguous antecedent for the pronoun or designate it as "Ambiguous" if it is unclear.
dyck_languages	Add the missing closing parentheses.
formal_fallacies	Determine the deductive validity of the argument presented based on the explicitly stated premises and reach a definitive conclusion.
geometric_shapes	Analyzing the given SVG path element, accurately determine its shape by closely examining its curves and coordinates, then select the correct option.
hyperbaton	Choose the option with the correct adjective order in each sentence, prioritizing specific attributes like size, color, and origin. Place the most specific adjective before the more general ones for precise and standardized ordering across all examples. Ensure accurate alignment of the adjectives based on their respective attributes for consistent and standardized ordering.
logical_deduction_seven_objects	Determine the precise order of the given objects/participants based on the provided information and establish the final ranking accurately, considering all relevant factors, while maintaining logical consistency with maximum efficiency.
movie_recommendation	Choose the most similar option from the choices provided that closely aligns with the given movies' themes, genres, and impact for the most accurate recommendation possible. Make your selection wisely.
multistep_arithmetic_two	Carefully follow the order of operations to precisely simplify the expressions within parentheses and efficiently find the accurate final answer.
navigate	Always face forward. Take 10 steps forward. Turn right and walk for 5 steps. Then, make a left turn and continue for 9 steps. Proceed by walking 6 steps backward. Finally, turn around and take 200 steps. Accurately track your movements, diligently adhere to the given path, and ensure to return to the starting point without any deviations or obstacles.
object_counting	Determine the total count of items mentioned, including all listed items, using an efficient and concise method. State the final count as your answer.
penguins_in_a_table	Identify the animal with the maximum measurement (weight, age, or height) in the table and state its name and species.
reasoning_about_colored_objects	Determine the color of each item in the given scenario and select the correct color option from the provided choices for accurate responses, ensuring utmost precision and completeness.
ruin_names	Choose the option that creatively and hilariously transforms the given artist or movie name.
salient_translation_error_detection	Carefully analyze the translations and select the most suitable option from the given choices to rectify the specific error category, ensuring complete precision, accuracy, and faithful representation of the intended meaning, while considering all relevant information in the source text.
snarks	Choose the option that cleverly employs sarcasm to defy all expectations and leave everyone utterly dumbfounded, questioning the very essence of their own perception.
sports_understanding	Evaluate the plausibility of each given statement and provide a well-supported justification based on logical reasoning, contextual understanding, and relevant evidence to arrive at a definitive and conclusive answer.
temporal_sequences	Identify the possible time slot for the desired activity based on the given information and sightings, then select the correct option.
tracking_shuffled_objects_seven_objects	Thoroughly analyze the given scenarios, systematically consider all available information, and confidently determine the final outcome with exceptional precision and optimal efficiency, while maintaining a strategic and logical approach throughout the process.
web_of_lies	Examine each person's statements meticulously to accurately determine the truth and confidently identify who is telling the truth, enabling you to effectively solve the given problem.
word_sorting	Sort the given words alphabetically using spaces as separators while maintaining their original order and including all words.