

McKinsey & Company

McKinsey Problem Solving Test

Practice Test

McKinsey Problem Solving Test – Practice Test

Practice Test Overview and Instructions

This practice test has been developed to provide a sample of the actual McKinsey Problem Solving Test used for selection purposes. This test assesses your ability to solve business problems using deductive, inductive, and quantitative reasoning. This practice test contains a total of 13 questions. The actual test contains 26 questions and you will be given 60 minutes to answer as many questions as possible.

You will be presented with a scenario based on an actual McKinsey client case. Information related to the scenario will be shown in text, tables, and exhibits. This information is presented in double-bordered areas and is distributed in sections throughout the scenario. The questions ask you to find the most appropriate answer to the problem as described using only the information presented. You should select one and only one answer to any question.

While completing this practice test, do not use any electronic devices (e.g., calculator, computer) when performing calculations to answer the questions. Electronic devices will not be permitted to be used during the actual test administration. Only scratch paper will be provided to perform computations. However, notes on the scratch paper will not be used in any way in determining your final test scores. Your final test score will be based on the number of questions you answer correctly.

The practice scenario is located on the following pages in addition to 13 multiple-choice questions. Only consider information contained within the scenario when determining your answer. Considering all information presented within the scenario is critical to answering questions correctly.

After you have completed the test, score your answers using the answer key located on the last page of this document. Add the number of correct answers to determine your final total score.

PLEASE GO ON TO THE NEXT PAGE

Kosher Franks

Kosher Franks is a company that sells hot dogs and other packaged meat products, such as salami and lunch meats, in the United States. *Kosher Franks*' products are primarily sold through grocery stores. While not a very large company, it has strong brand recognition in the packaged meat market and a reputation for high quality products.

Kosher Franks' customers are large grocery store chains or grocery distributors, who sell to smaller chains or independent grocery stores across the US. The prices, which *Kosher Franks* presents to these chains or distributors, are negotiated individually and depend on many factors. Some of these factors include the volume to be purchased, whether the customer is a new customer or an existing one, and any promotional or marketing arrangements that have been agreed upon with the customer. The stores then sell the products to consumers at a higher price in order to make a profit.

Table 1 shows *Kosher Franks*' data on this year's sales revenue and the average annual revenue growth over the last 5 years. The data in Table 1 is broken down by major product category.

	Revenue this year	Average annual revenue growth over last 5 years
All beef hot dogs	\$366.7m	4.2%
Other packaged meat	\$65.3m	1.5%
Sliced meat	\$55.3m	1.2%
Other products (e.g., pickles, sauces)	\$15.1m	-7.0%

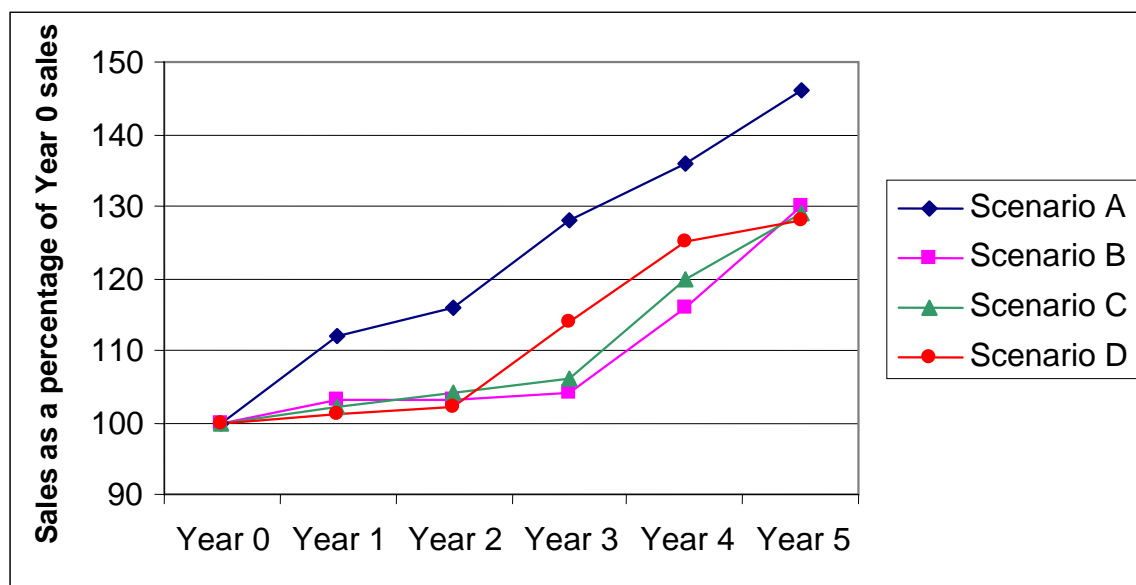
Kosher Franks manufactures all of its own products and invests significantly more resources than its competitors to ensure superior quality. This is especially valuable to them because this type of product has a poor overall reputation for quality in the United States.

Kosher Franks was founded almost 100 years ago, and until recently, was run as a family business. However, after almost a decade of poor sales growth, the company was acquired last year by a major conglomerate, *FoodInc*, with the goal of increasing sales.

The CEO of *Kosher Franks* has asked a McKinsey team to help him identify ways to improve sales growth while maintaining good levels of profitability. He states that a 10% annual sales growth should be the target. In five years time, he wants to be able to look back and see an annual sales growth of 10% or more for each of the previous 2 years, or *Kosher Franks* will no longer be part of *FoodInc*. Exhibit 1 represents four potential scenarios for *Kosher Franks*' future sales growth, with Year 0 representing this year.

PLEASE GO ON TO THE NEXT PAGE

Exhibit 1
Scenarios for Growth of *Kosher Franks*' Sales over the Next 5 Years



1. According to the CEO of *Kosher Franks*, which of the scenarios presented in Exhibit 1 would satisfy *FoodInc*'s requirements?
 - A) Scenario A
 - B) Scenario B
 - C) Scenario C
 - D) Scenario D

2. Which of the following measures, if done alone, would definitely NOT help address the objectives of the CEO of *Kosher Franks*?
 - A) Lowering the price of select *Kosher Franks*' products
 - B) Introducing new products into the *Kosher Franks*' range
 - C) Removing a category of products from the existing *Kosher Franks*' range
 - D) Increasing the advertising of *Kosher Franks*' products in the mass media

PLEASE GO ON TO THE NEXT PAGE

3. Which of the following statements is valid based on the data in Table 1?
- A) Revenue for “Other products” was more than \$20 million five years ago
 - B) Hot dog revenue was more than \$350 million five years ago
 - C) Sales of sliced meats grew by no less than 1.2% in each of the last five years
 - D) Total sales for *Kosher Franks* did not grow at all in the last five years
4. Which of the following values is the best estimate of *Kosher Franks*' revenue in Year 4 under Scenario C in Exhibit 1?
- A) \$441m
 - B) \$495m
 - C) \$549m
 - D) \$603m

The team decides to focus more on the all beef hot dog product category, as it is by far *Kosher Franks*' largest percentage of sales. As part of the work, the team decides it is worthwhile to investigate *Kosher Franks*' current consumer base for this category. This consumer base is thought to consist mainly of Jewish households because the product satisfies their kosher food requirement.

5. Which of the following statements, if true, would NOT help support the assumption that most of *Kosher Franks*' hot dog consumers are Jewish?
- A) The trends in *Kosher Franks*' hot dog sales in the last five years are very similar to those of other kosher food products
 - B) All of *Kosher Franks*' major grocery chain customers have shopping aisles dedicated to kosher foods
 - C) In a recent consumer survey, the awareness of the *Kosher Franks*' label was three times as high among Jewish respondents than among other respondents
 - D) All stores who stock *Kosher Franks*' hot dogs are in areas with above average concentrations of Jewish households

PLEASE GO ON TO THE NEXT PAGE

The team decides to investigate the potential impact of different types of marketing efforts on sales of *Kosher Franks*' hot dogs. In particular, the idea of a 5% retail price reduction coupled with mass media advertising of the reduction is suggested, especially for cities known to be more price-sensitive. Los Angeles is an example of one of these cities and the team decides to estimate the potential of this strategy in Los Angeles. The head of sales for *Kosher Franks* gives you the following information:

- The advertising campaign would cost \$2.1 million
- *Kosher Franks* has 1 million hot dog purchasers in Los Angeles, who buy one pack of six hot dogs per month on average
- The average price to grocery chains and distributors of a pack of six hot dogs is \$10
- The retail price of a pack of six hot dogs is \$11
- *Kosher Franks* makes a 20% profit margin on hot dogs
- This campaign will not impact the profit in dollars made by the store per pack of six hot dogs sold

6. Which of the following statements, if true, would best support an argument AGAINST implementing this price reduction campaign in Los Angeles?
- A) Consumers purchase *Kosher Franks*' hot dogs because they believe they taste better than other hot dogs and are made from fresher ingredients
 - B) *Kosher Franks* has never used a price reduction marketing strategy on hot dogs in the 100 years of its existence and many of the senior management would feel that such a move would not suit the brand values
 - C) All large grocery chains stock one premium, one mid-range, and one economy hot dog product and the 5% reduction would move *Kosher Franks*' hot dogs from premium to mid-range
 - D) A similar strategy was attempted for one of *Kosher Franks*' pickles products recently and only resulted in a 2% growth in sales volume, which translated to a 3% reduction in sales revenue

PLEASE GO ON TO THE NEXT PAGE

7. What is the average profit, in dollars per hot dog, made by *Kosher Franks* before implementing this campaign?
- A) \$0.33
 - B) \$0.67
 - C) \$1.67
 - D) \$2.00
8. *FoodInc* requires all marketing campaigns to pay back the initial investment within the first year. What percentage increase in the number of hot dogs sold would be required in the first year of the Los Angeles price reduction campaign in order to pay back the advertising investment?
- A) 20%
 - B) 30%
 - C) 40%
 - D) 50%

The marketing manager of *Kosher Franks* expresses concern about the impact of this price reduction campaign on consumer perceptions of the brand. He states that a price reduction of 5% is pretty significant and may in itself be detrimental to the premium brand image, which drives a lot of sales.

9. Which of the following statements, if true, would best support the marketing manager's assertion?
- A) In a recent survey, *Kosher Franks*' consumers quoted "price" as the second most important indicator of quality in a list of ten factors
 - B) In a recent survey, *Kosher Franks*' consumers quoted "price" as the eighth most important factor out of ten in their decision to buy a product
 - C) In a recent survey, 78% of *Kosher Franks*' consumers said they would still buy *Kosher Franks*' hot dogs even with a 10% price increase
 - D) In a recent survey, 34% of *Kosher Franks*' customers said they would never consider buying another brand of hot dog

After conducting some analysis, the team compiles overall summary profiles of the hot dog market in two of the cities being studied. These profiles are given in Table 3.

Overall Profiles of 2 Cities Being Studied	
City 1	City 2
<i>Kosher Franks</i> is the dominant brand in the hot dog category (both kosher and overall)	<i>Kosher Franks</i> is a strong brand in the kosher hot dog category, but a weak brand in the overall hot dog category
There is high potential to increase loyalty among existing consumers and convert non-kosher hot dog consumers	<i>Kosher Franks</i> ' hot dogs are priced at a modest premium relative to competitors
<i>Kosher Franks</i> ' hot dogs are priced at a high premium relative to competitors	This is a highly price-sensitive market. In particular, non-kosher customers decide almost entirely based on price
There is low price sensitivity with almost no brand switching by consumers	Historically, <i>Kosher Franks</i> has a mixed performance on marketing promotions
Historically, <i>Kosher Franks</i> has a very strong marketing promotion performance	There is a high potential to acquire new kosher hot dog consumers for the <i>Kosher Franks</i> ' brand and build loyalty among existing consumers of the brand

10. Which of the following potential strategies would suit NEITHER of the two cities in Table 3?

- A) Build awareness through trials and advertising campaigns on the taste and quality of the *Kosher Franks*' hot dogs
- B) Develop a program that rewards consumers for frequent purchases of *Kosher Franks*' hot dogs
- C) Ask all grocery stores to remove *Kosher Franks*' hot dogs from the kosher food aisles and instead stock them in the packaged meat aisles
- D) Increase the price of *Kosher Franks*' hot dogs by 1% across all grocery stores

PLEASE GO ON TO THE NEXT PAGE

11. Which of the following potential strategies would best suit City 2?

- A) Offer lower prices at grocery stores where customers appear to be more price sensitive
- B) Monitor competitor prices and maintain *Kosher Franks'* prices at a fixed premium to those prices
- C) Ensure *Kosher Franks'* hot dogs are not just placed on the kosher aisles of retail stores
- D) Set up taste trials in the non-kosher aisles of major retail stores

The marketing and promotions department of *Kosher Franks* in City 2 has traditionally used a combination of mass media (e.g., TV and newspaper) and targeted promotions (e.g., trials and fliers) to drive sales of hot dogs. The head of this department tells you that he does not know which of these methods, if any, are truly effective at driving sales.

12. Which of the following courses of action would you recommend to the marketing and promotions department head of *Kosher Franks* in City 2?

- A) Spend 6 months of the next year doing only mass media marketing and then another 6 months doing only targeted marketing to determine which is most effective
- B) Suspend all marketing campaigns for 6 months to determine whether any of the campaigns are significantly contributing to sales
- C) Increase all types of marketing campaigns slowly, one-by-one, to determine if there is a significant increase in sales driven by a specific campaign
- D) Decrease each type of marketing campaign slowly one-by-one to determine if there is a significant decrease in sales caused by the removal of a specific campaign

At the end of the project, the team recommends a tailored city-by-city strategy to increase sales. In many cities, an important part of the strategy is to change the positioning of the hot dog brand from a focus on the ethnic community to a more diverse and affluent consumer segment. The CEO is pleased with the plan, but has concerns about the expectations of the new parent company. He states that aggressive sales growth targets are fine for companies well established in the *FoodInc* family, but he hopes the parent company is realistic about a newly acquired company like *Kosher Franks*.

13. Which of the following statements best reflect the concerns of *Kosher Franks*' CEO?
- A) He is concerned that *Kosher Franks* will never be able to achieve the sales growth targets set by *FoodInc* because *Kosher Franks* sells a premium product that can never have a rapid sales growth
 - B) He is concerned that *FoodInc* will demand aggressive sales growth targets immediately without taking into account the time needed to make significant changes to *Kosher Franks*
 - C) He is concerned that *FoodInc* sets sales growth targets that are too aggressive and not realistic for companies operating in today's competitive food markets
 - D) He is concerned that *Kosher Franks* will never fit into the *FoodInc* family because the other *FoodInc* companies have been owned by *FoodInc* for quite some time and are well established

Answer Key

1. **B** – Observation of Exhibit 1 shows that Scenario B is the only scenario involving a 10% or greater sales growth for **each** of the previous two years (Year 3-4 growth is approximately 12 points on a base of approximately 104 = 11.5% growth, while Year 4-5 growth is approximately 14 points on a base of 117 = 11.9% growth).
2. **C** – From Table 1, there is no single product category that, if removed, would improve annual sales growth to the level of 10% required by the CEO. Options A, B and D all have the possibility of generating additional sales growth.
3. **A** – Using the information on current revenues and growth rates in Table 1, it can be calculated that this response is the only one that is valid. Since the average revenue grew -7.0% every year, the revenue five years ago was approximately \$21.71 million, which is more than \$20 million.
4. **D** – From Table 1, total revenue this year is \$502.4m. According to Scenario C in Exhibit 1, Year 4 revenue will represent 120% of this year's revenue. The closest figure to this is \$603m.
5. **B** – Options A, C and D all establish a relationship between the *Kosher Franks* label and Jewish customers. However, such a relationship is not clear from Option B because it is not known whether or not *all* major grocery chains have kosher aisles.
6. **C** – Options A, B and D do not provide a direct factual argument against the price reduction campaign for hot dogs. Option C does provide this argument, as it indicates that there is a risk that *Kosher Franks* would lose grocery chain customers because of possible competition in the mid-range category.
7. **A** – The average profit per pack of hot dogs is \$2 (calculated by taking the information presented before question 6 that states that *Kosher Franks* makes a 20% profit margin, and sells a pack of hot dogs to grocery store chains and distributors for \$10. 20% of \$10 would be a \$2 profit per pack). With 6 hot dogs per pack, this translates to an average profit of \$0.33 per hot dog.
8. **D** – Currently a total of 12m packs are sold annually. A 5% retail price reduction means that *Kosher Franks* would lose \$0.55 in profit per pack, which comes to a total of \$6.6m profit lost on current sales. Therefore, to pay back the advertising investment, *Kosher Franks* would need to sell enough additional packs to obtain \$8.7m in profit (which is \$6.6m lost profit plus the \$2.1m investment). At a new profit of \$1.45 per pack, this would require 6m packs of hot dog, a 50% increase on the 12m currently sold.
9. **A** – This is the only option which indicates a relationship between the product price and the perception of product quality among *Kosher Franks*' consumers. Thus, this implies that a price reduction could impact consumers' opinion of *Kosher Franks* as a premium brand, which supports the assertion of the marketing manager.

10. **C** – Options A, B and D each positively address a characteristic of at least one of the two cities. However, Option C would negatively affect the dominance of the product in the kosher category in both cities.
11. **A** – Since City 2 is a highly price sensitive city, selective price adjustment would be a potential strategy to increase sales. All other answer choices address issues which are not of concern or not likely to be effective in City 2.
12. **D** – Options A and B should not be considered as they would risk a severe impact on sales. Option D will certainly help, because if any of the current marketing activities are effective, this will certainly be revealed if a sales drop is noticed following a decrease in a certain marketing activity. It is not clear that Option C would help as current marketing activities may be maximally effective, so an increase in these may have no impact on sales.
13. **B** – The CEO’s comment indicates that he is concerned about the aggressiveness of the sales targets given Kosher Frank’s newly acquired status. The only option reflecting both of these concerns is Option B.