Online Case

Practice case

BCG

INSTRUCTIONS (1/3)

During our recruiting process you will experience BCG's online case. Like our case interviews, it is an opportunity for you to better grasp the types of issues we address with our clients and for us to assess a number of key skills such as business judgment, logical reasoning, and quantitative aptitude. The online case takes 45 minutes to complete and consists of more than 20 questions based on several documents describing one business scenario.

Some of these documents will only become available at a later stage of the case. You will be able to move forward and backwards through the case as needed, and you may change your responses before time runs out.

The following page displays an example of the screen you will see during the actual test.

INSTRUCTIONS (2/3)

BCG EXPENSIVEOIL CASE

ELAPSED TIME: 2:00 / 8:00

QUESTION 1 / 4

What is approximately the average gross margin?

- ○ 5.9%
- ○ 6.3%
- ○ 6.7%
- ○ None of the above/We lack sufficient information at this stage

Doc 1 | Doc 2 | Doc 3

PRICING STRATEGY – "EXPENSIVEOIL" COMPANY

CASE OVERVIEW

For the past twenty years, the government has set the retail price of gasoline for cars

Under the recent increase in oil prices, the government has decided to allow the gasoline distribution companies to set the retail price themselves

The market leader – ExpensiveOil – has hired us to advise them on an appropriate strategy for pricing in the country

CURRENT SITUATION

Previously, the price changed on a weekly basis to ensure that the distribution companies make €0.10 per litre in gross profit

There are three types of gasoline: Fast, High, and Regular differentiated by the level of octane and the degree to which the fuel is unleaded

Client sales are 30% in the €1.7 per litre price range, 40% in the €1.60 price range , and 30% in the €1.50 price range. For all types, gross profit is approximately €0.10

BOSTON CONSULTING GROUP

3

INSTRUCTIONS (3/3)

This booklet contains an example to help you prepare for the online case. It consists of 23 questions and you should complete it in no more than 45 minutes. In this practice case, there is one (and only one) answer for each question. You can use a basic calculator, but no other calculating tool (e.g. spreadsheet). You may also use scratch paper to help you with your calculations. Do not hesitate to skip a question that you find too difficult in order to save time for others.

The practice case starts on the next page. Once you have completed it, you can check your answers at the end of this booklet. To determine your overall score, please award yourself 3 points for each correct answer, 0 points for each unanswered question, and deduct 1 point for each incorrect answer.

Good luck!

MED-LINES CASE

CASE BRIEFING

BCG has been contacted by the CEO of Med-Lines. Med-Lines is a ship owner which operates ferries in Greece. The CEO has asked BCG to investigate opportunities to increase the company's revenues.

BCG's internal Knowledge Team provided you with a synthesis of the Greek tourism industry (document 1).

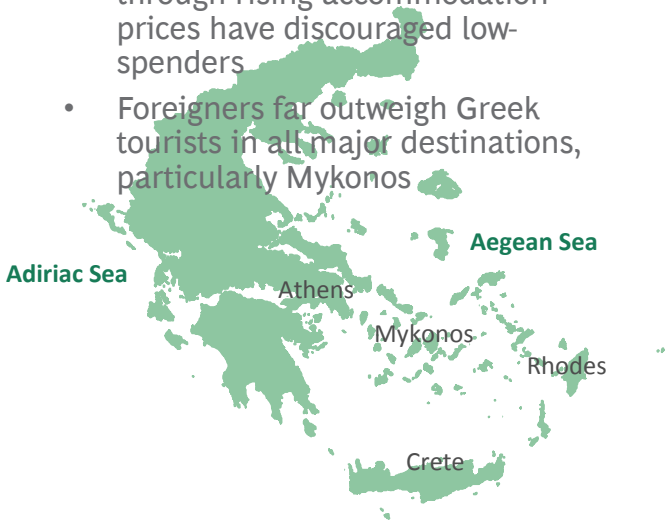
One of your team members also gave you an additional document (document 2).

MED-LINES CASE
DOCUMENT 1: GREEK TOURISM INDUSTRY IS GROWING

3 MAJOR TOURIST DESTINATIONS IN THE AEGEAN SEA

Passenger traffic in the Aegean is mainly between Athens and 3 islands destinations

- Crete tourism consists mainly of lower spending, young tourists
- Rhodes has been traditionally a destination attracting older, wealthier tourists
- Mykonos has a mixed profile even through rising accommodation prices have discouraged low-spenders
- Foreigners far outweigh Greek tourists in all major destinations, particularly Mykonos



MOST TOURISM-ASSOCIATED INDUSTRIES ARE GROWING

Travel services revenues rising fast

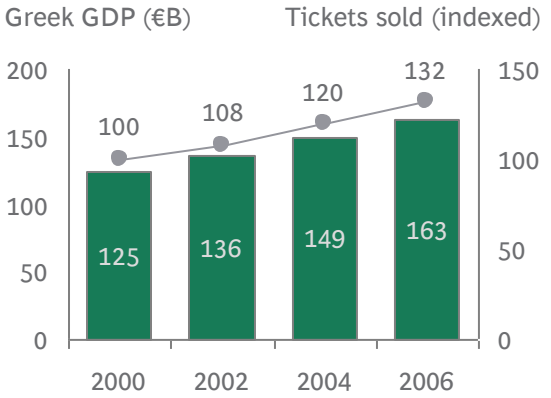
- Airline travel
- Ferry line revenues
- Hotel, restaurants

Overall tourist arrivals expected to increase in 2008 driven by remarkable growth in inbound tourism from Russia

- In 2008, Russian tourist arrivals to increase by 35% year over year
- Also in 2008, increase in arrivals from Romania forecasted to reach 13%, from Bulgaria 15%, from the US 12%, from China 15% and from Italy 6% year over year

PASSENGER TRAFFIC IS ON THE RISE IN THE AEGEAN

A recent study has revealed a strong correlation between Greek GDP and the passenger traffic in the Aegean. The total number of tickets sold to and from major ports in Athens, Crete, Mykonos and Rhodes appears to follow closely the GDP of Greece over the past years and the trend is expected to continue



MED-LINES CASE
DOCUMENT 2: MED-LINES OPERATES FLEET OF FERRIES BETWEEN MAJOR GREEK PORTS

MED-LINES IS A MEDIUM-SIZED FERRY OPERATOR

Our client Med-Lines, a medium-sized ship owner operates a number of ferries between the 4 major ports in Greece

Med-Lines operates at least 2 ferries between all routes during summer months, with each ferry operating 2 round-trips. Year-long, Med-Lines is obligated by the regulatory authorities to operate all routes on an minimum basis (at least 1 round-trip per day)

An individual ferry operates continuously for 11 months and then enters maintenance for 1 month per year

DEPARTURES & ARRIVALS FOR MAJOR PORTS (2007)

The following data lists all arrivals and departures between the 4 major ports in the Aegean Sea

PORT	DEPARTURES (K)	ARRIVALS (K)
Athens	4500	4500
Mykonos	3000	3000
Crete	1500	1300
Rhodes	500	500
Other	500	700

- A. All routes to/from Rhodes go through Mykonos
- B. Passengers arriving at Mykonos stay at least 1 night on the island before they move on to another destination due to connecting route limitations
- C. Mykonos is connected by ferry only to Athens and Rhodes
- D. All arrivals in Other ports originate in Athens

MED-LINES CASE
QUESTIONS 1 TO 11

1. Greek GDP is expected to reach €198B in 2008, owing to productivity improvements and investments paying off across industries. Based on this forecast, as well as the available data on Greek GDP evolution between 2000 and 2006, what is the total growth of Greek GDP over the period from 2000 to 2008?
    a) 58%
    b) 38%
    c) 30%
    d) 63%

2. Based on the information provided, what would you expect the indexed number of tickets to be in 2008?
    a) 132
    b) 144
    c) Over 60% higher than in 2000
    d) None of the above

MED-LINES CASE
QUESTIONS 1 TO 11

3. Which of the following statements are true based on the information provided?
   1. The tourism industry in Rhodes is becoming increasingly focused on wealthier tourists
   2. Greek tourists avoid Mykonos over the summer months
      a) Only statement 1 is correct
      b) Only statement 2 is correct
      c) Neither of the statements is correct
      d) Both statements are correct

4. Which of the following statements are true based on the information provided?
   1. Arrivals from Russia account for 35% of total arrivals growth
   2. Tourist arrivals from Bulgaria and China are growing at the same rate in 2008
   3. In 2007, Greece registered 35% fewer arrivals from Russia compared to 2008
      a) All statements are correct
      b) Only statements 1 and 2 are correct
      c) Only statements 2 and 3 are correct
      d) Only statement 2 is correct
      e) Only statement 3 is correct

MED-LINES CASE
QUESTIONS 1 TO 11

5. Based on the information provided to you in document 2, how many tickets are sold to passengers traveling from Athens to Mykonos?

    a) 2M

    b) 2.5M

    c) 3M

    d) 3.5M

6. Which of the following is supported by the data provided on departures and arrivals in 2007?

    1. 1M passengers visited Rhodes
    2. 200K passengers who arrived in Athens by ferry leave by plane
    3. 500K passengers left from Rhodes for Mykonos

    a) Only statement 1 is correct

    b) Only statements 1 and 2 are correct

    c) Only statements 2 and 3 are correct

    d) Only statement 3 is correct

MED-LINES CASE
QUESTIONS 1 TO 11

7. Based on the information provided, which of the following statements is correct?
   1. 20M tickets were sold in 2007
   2. 1.5M passengers traveled from Athens to Crete in 2007
   3. 15M tickets were sold over the 3 summer months of 2007
      a) Only statement 1 is correct
      b) Only statements 1 and 2 are correct
      c) Only statements 2 and 3 are correct
      d) None of the statements are correct

8. Which of the following is supported by the information available to you?
      a) 10M foreign tourists visited Greece in 2007
      b) 10M passengers traveled between major Greek ports in 2007
      c) 45% of all passengers who used the ferry lines went through Athens
      d) 15% of all departures were registered in Crete

MED-LINES CASE
QUESTIONS 1 TO 11

9. What were total passenger ticket revenues in 2007 given the data provided on departures and arrivals in 2007? Med-Lines has provided us with the following average yearly one-way ticket prices: €10 for Mykonos–Rhodes and Rhodes–Mykonos, €20 for Athens–Mykonos and Mykonos–Athens, €30 for Athens–Other, Other–Athens, Athens–Crete and Crete–Athens.
    a) €210M
    b) €230M
    c) €250M
    d) €280M

10. Based on the information provided, which of the following is true?
    a) Med-Lines must operate at least 365 round-trips per route per year
    b) Med-Lines must operate at least 1,460 round-trips in total per year
    c) Med-Lines must operate at least 1,900 round-trips in total per year
    d) Med-Lines must operate at least 450 round-trips in total per year
    e) None of the above

MED-LINES CASE
QUESTIONS 1 TO 11

11. Med-Lines is considering a joint-venture with a tour operator. During discussions, Med-Lines has discovered that about 150K foreign tourists per year who fly into Crete directly from their home countries would also be interested in visiting Mykonos and Athens. The tour operator would then fly them out of Athens to their home destinations directly. Given a proposed average ticket price of €15 for the Mykonos-Crete route, what is the expected ferry ticket revenue from this venture?

    a) €2M
    b) €2.25M
    c) €3M
    d) €5.25M
    e) Not enough information to decide

MED-LINES CASE

CASE BRIEFING

You now have access to another source of information (document 3)

MED-LINES CASE
DOCUMENT 3: THERE ARE 3 MAIN SOURCES OF REVENUES FOR A TYPICAL FERRY

PASSENGER TICKETS

- A typical small-sized ferry has a capacity of 600 passengers
- 500 are deck tickets and 100 are cabin tickets
  - in the summer months, cabin tickets cost 50% more than deck tickets
  - in the summer months, cabin tickets are always sold out
- In the summer months of June, July and August, a typical ship reaches an occupancy rate of 90%. The rest of the year it averages 30%

FOOD & DRINK SALES

- Selection of food & drink items at the cafeteria is rather limited
  - sandwich = €4
  - soda or water = €1
- Prices of these standard items are regulated and cannot be increased without approval by government but the operator can charge less
- On an average trip, 50% of all passengers have a sandwich and a soda, 30% only a soda and 20% nothing
- The ship cafeteria is licensed to an external operator based on an annual contract. Med-Lines gets 20% of total cafeteria sales

VEHICLE TRANSPORT

- Ferries carry 2 types of vehicles passengers and commercial trucks
- A typical ferry's hull can hold 100 passengers vehicles or 20 trucks
  - an average truck takes as much space as 5 passenger vehicles
- An average passenger vehicle ticket is €20, regardless of the month

MED-LINES CASE
QUESTIONS 12 TO 16

12. What is the average food & drink revenue per passenger for a typical ferry trip?
    a) €2.40
    b) €2.80
    c) €3.20
    d) €3.60

13. What is the food & drink revenue per trip for a typical trip during the summer months?
    a) €1,296
    b) €1,440
    c) €1,512
    d) €1,680
    e) €1,728

MED-LINES CASE
QUESTIONS 12 TO 16

14. From the information available to you, which is the most likely course of action for the ferry operator to increase its own revenue from food & drink sales?

    a) Increase prices for the items already sold in cafeterias

    b) Decrease prices for the items already sold in cafeterias

    c) Decrease passenger ticket prices

    d) Increase variety of items sold in the cafeterias

    e) Renegotiate the contract with the cafeteria operator

    f) None of the above

15. During the summer months, you can assume ferries utilize 100% of their vehicle transport capacity. If a truck ticket costs 10 times as much as a passenger vehicle ticket, which of the following is most likely true?

    1. Minimum revenue from vehicle ticket sales is around €2,000 per trip
    2. Maximum revenue from vehicle ticket sales is around €4,000 per trip
    3. In the case where 60% of available vehicle capacity is taken by passenger vehicles, total vehicle revenue is about €2,800 per trip

    a) Only statement 1 is correct

    b) Only statements 1 and 2 are correct

    c) Only statement 3 is correct

    d) All statements are correct

MED-LINES CASE
QUESTIONS 12 TO 16

16. For a typical summer trip from Athens to Mykonos, what is the ratio of revenue from deck tickets to revenue from cabin tickets?

    a) 5:1

    b) 4.4:1

    c) 3.3:1

    d) 2.9:1

MED-LINES CASE

CASE BRIEFING

Med-Lines has now provided us with information regarding the 3 types of ferries on the Athens-Crete route (document 4).

MED-LINES CASE
DOCUMENT 4: DATA COLLECTED FOR 3 MED-LINES FERRIES ON THE ATHENS-CRETE ROUTE (2007)

	FERRY TYPE 1	FERRY TYPE 2	FERRY TYPE 3
Round-trips (2007)	200	200	300
Total revenue (indexed)	100	220	150
Passengers (K)	320	420	270
Vehicles (K)	50	200	50
Capacity (passengers)	1200	1800	600
Fuel consumption (liters/mile)	150	350	200
Crew	100	120	60
Maximum speed (knots)	24	32	40

MED-LINES CASE
QUESTIONS 17 TO 20

17. Which of the following statements are supported by the information provided?
    1. Combined, the 3 ferries transported 300K passenger vehicles in 2007
    2. The type 3 ferry had the highest total revenue per passenger
    3. The type 1 and 3 ferries had similar total revenue per trip
    4. On an average trip, a type 3 ferry has the fewest crew members per passenger on board

    a) Only statements 1, 2 and 3 are correct
    b) Only statements 2, 3 and 4 are correct
    c) Only statements 2 and 4 are correct
    d) Only statements 2 and 3 are correct
    e) All statements are correct

18. Assuming the type 1 and type 2 ferries have 100% and 200% higher total cost per trip than the type 3 ferry, which ferry was likely to be the most profitable per passenger in 2007?

    a) The type 1 ferry
    b) The type 2 ferry
    c) The type 3 ferry
    d) Not enough information to decide

MED-LINES CASE
QUESTIONS 17 TO 20

19. Which of the following factors, if true, would affect passenger traffic on the Athens–Crete route?
    1. Customs procedures and road infrastructure have significantly improved, increasing freight transport by road
    2. Total European GDP growth has been slowing down in the past half decade
    3. Three new companies have applied for hydroplane licenses to provide service on the Athens-Crete route
    4. New management tools such as dynamic pricing and loyalty programs are being introduced in the passenger ferry industry

    a) Only statements 1 and 2 are correct
    b) Only statements 2 and 3 are correct
    c) Only statements 3 and 4 are correct
    d) Only statements 1 and 4 are correct
    e) All statements are correct

20. Med-Lines expects the combined number of tickets sold to increase by 10% per year for the next 4 years. What is the expected increase in total number of tickets sold during this period?

    a) 40%
    b) 44%
    c) 46%
    d) 48%

MED-LINES CASE

CASE BRIEFING

You now have access to another source of information (document 5)

MED-LINES CASE
DOCUMENT 5: MED-LINES IS CONSIDERING EXPANDING ITS FLEET OF FERRIES

GLOBAL SHIP-BUILDING MARKET

Med-Lines has been considering adding 2 ferries to its existing fleet. In this regard, it has been looking into the ship-building market and has collected the following information

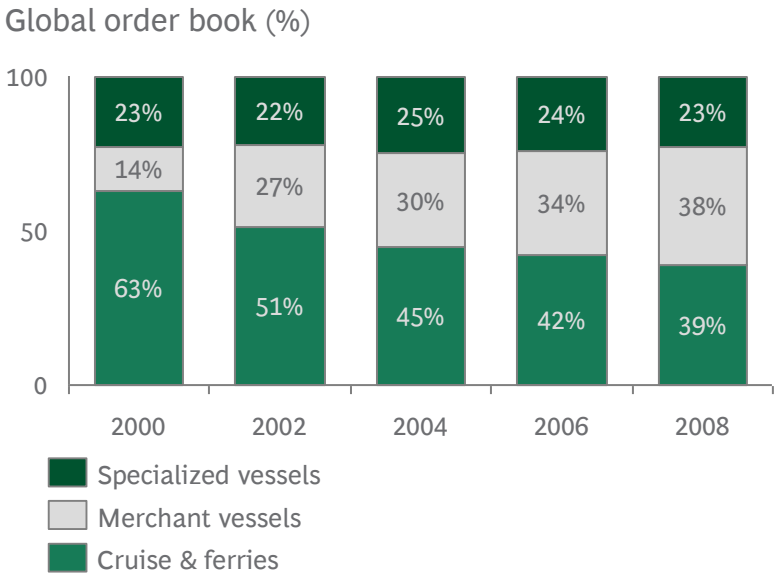
Traditionally, European shipyards have been focused on cruise ships and ferries, taking advantage of specialized legacy equipment and know-how in design

On the other hand, Asian shipyards are generally younger in age and equipment with more modern technology. This has allowed Asian shipbuilders to take the lead in large merchant and specialized vessels (e.g. oil tankers, container ships)

GLOBAL SHIP-BUILDING ACTIVITY BOOMING

Overall value of vessel deliveries including merchant ships, cruise ships, and ferries has been on the rise and is forecasted to continue growing

However, order book percentage for cruise ships & ferries has been decreasing



MED-LINES CASE
QUESTIONS 21 TO 23

21. The graph on the right-hand side of document 5 shows the global order book for shipbuilding in the recent past. The order book is the value of total orders for new ships received by shipbuilders globally. Which of the following statements, if true, would most likely explain the order book data?

    a) The recovery of airline travel after 2003

    b) The cost of fuel has been rising since 2004

    c) The economies of India and China have been booming during this period

    d) Shipbuilding capacity has been shifting to Asia from Europe

22. Instead of adding new ferries to its fleet, Med-Lines has decided to consider acquiring a player with existing ferry operations. A potential acquisition target, Italian Seaways, operates conventional ferries on routes in the Adriatic Sea between northwest Greece and southern Italy. Total revenue per trip for Italian Seaways is fairly constant throughout the year. Trips during March register the lowest revenue whereas trips in August the highest. However, the total revenue of August trips is only ~20% higher than that of March. Which of the following statements, if true, would explain this?

    a) Southern Italy is a big producer of watermelons and other summer fruits

    b) On-board food sales in August are 20% higher than in March

    c) Southern Italy has the least congested ports in the winter months

    d) Italian Seaways has locked in long-term contracts with the largest wholesale exporters of winter fruits in Italy

    e) Italian Seaways has raised ticket prices in the winter months to account for the drop in tourist travel during this period

MED-LINES CASE
QUESTIONS 21 TO 23

23. Historically, passenger traffic on the Greece–Italy route has been correlated with international tourist arrivals in Greece. In the past few years, this correlation has been decreasing. Which of the following, if true, would best explain the decrease in correlation?

    a) The increasing share of airlines as mode of transport for tourist travel

    b) The largest part of the growth of tourist arrivals to Greece will come from markets outside North and Central Europe

    c) Competition from other tourist destinations in the Adriatic (e.g. Croatia) has been increasing

    d) All of the above

ANSWERS

To determine your overall score, please award yourself 3 points for each correct answer, 0 points for each unanswered question, and deduct 1 point for each incorrect answer.

MED-LINES CASE
ANSWERS 1 TO 23

1. a

   Total growth of Greek GDP between 2000 and 2008 is defined as the ratio between 2008 and 2000 GDP values minus 1. 2008 GDP is €198B, as mentioned in the question, 2000 GDP is given on the graph of document 1 (€125B).

   Total growth is therefore: $\frac{198}{125} - 1 \approx 58\%$

2. d

   Number of tickets sold appears to closely follow GDP. Therefore, total growth of tickets sold from 2000 to 2008 should be approximately 58%. If the indexed number of tickets sold in 2000 is 100, then the indexed number of tickets sold in 2008 could be calculated as follows: $100 \times (1 + 58\%) = 158$

3. c

   According to document 1, Rhodes has been "traditionally" attracting wealthier tourists vs. Crete, it is not a recent trend; therefore statement 1 is not correct.

   The document also mentions that there are many more foreigners in Mykonos than Greek tourists, but this does not mean that Greek tourists avoid Mykonos (as an extreme example, Greek tourists could go only to Mykonos as a destination and still be outnumbered by foreign tourists); therefore there is no information to support statement 2.

MED-LINES CASE
ANSWERS 1 TO 23

4. d

Document 1 provides all of the information regarding trends in foreign tourist flows from 2007 to 2008, but there is no information supporting the fact that arrivals from Russia account for 35% of total growth. The actual number of foreign tourists would be needed to make such a calculation; therefore statement 1 is not correct. The growth rate of tourist arrivals from Bulgaria and China is 15% in both cases; therefore statement 2 is correct.

Using the data provided, foreign tourist flow increased by 35% for Russia, which can be illustrated by the following equation:

$$\frac{\text{Number of tourists from Russia in 2008}}{\text{Number of tourists from Russia in 2007}} - 1 = 35\%$$

We can calculate the relative number of tourists from Russia in 2007 compared to 2008 as:

$$\frac{\text{Number of tourists from Russia in 2007}}{\text{Number of tourists from Russia in 2008}} = \frac{1}{1+35\%} \approx 74\%$$

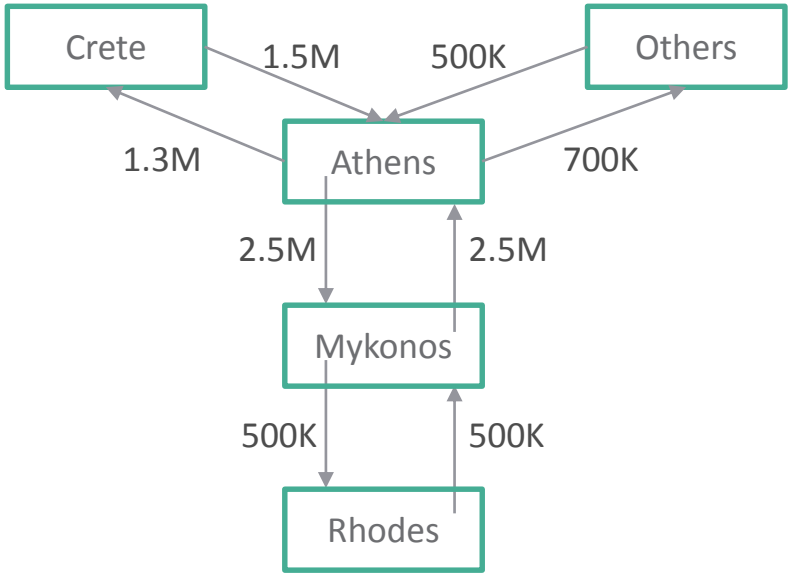
Therefore, in 2007, there were ~26% fewer arrivals from Russia in Greece than in 2008: statement 3 is not correct.

MED-LINES CASE
ANSWERS 1 TO 23

5. b

All routes from Rhodes go through Mykonos (statement A) so you have 500K arrivals to Mykonos from Rhodes. Knowing that you have overall 3M arrivals to Mykonos and that (statement C) the only other port connected to Mykonos is Athens, tickets sold for Athens-Mykonos are: $3M - 500K = 2.5M$

You can sketch a simple drawing to illustrate the different flows:



MED-LINES CASE
ANSWERS 1 TO 23

6. d

   There are 500K arrivals to Rhodes, so there cannot be 1M passengers visiting the island; therefore statement 1 is not correct. There is no information regarding the means of transportation to leave Athens that could support statement 2. As Rhodes is only connected to Mykonos (statement A), you know that the 500K passengers leaving Rhodes all go to Mykonos; therefore statement 3 is correct.

7. d

   The number of tickets sold in 2007 is the sum of the departures tickets or the sum of arrivals, i.e.:

   Therefore statement 1 is not correct. It is only possible to travel from Athens to go to Crete, so the number of passengers traveling from Athens to Crete is the number of arrivals (1.3M); therefore statement 2 is not correct. There is no information regarding seasonality of tickets sold that could support statement 3.

8. d

   In the previous question we calculated that there were 10M tickets sold in 2007, but these tickets are not only sold to foreign tourists; therefore answer a is not correct. A tourist can also buy different tickets (for example, if you want to go to Rhodes from Athens, you need to buy 2 tickets: Athens-Mykonos and Mykonos-Rhodes), so there are actually less than 10M passengers per year traveling between major Greek ports; therefore answer b is not correct and there is not enough information to confirm answer c. There were 1.5M departures from Crete from a total of 10M departures; therefore answer d is correct.

MED-LINES CASE
ANSWERS 1 TO 23

9. b

   To answer this question, you can use the drawing sketched earlier to answer question 5. Revenue for 2007 can be calculated as follows: $(500K \times 2 \times €10) + (2.5M \times 2 \times €20) + ((1.3M + 1.5M + 700K + 500K) \times €30) = €230M$

10. b

    Regulatory authorities require Med-Lines to operate at least 1 round trip per day for each route. The drawing we sketched earlier shows that there are 4 routes; therefore Med-Lines must operate: $365 \times 4 = 1{,}460$ round trips per year

11. d

    150K foreign tourists will arrive by plane to Crete. Since they fly back from Athens, the tour operator would sell them a ticket to go from Crete to Mykonos (€15) and then from Mykonos to Athens (20€). Expected ferry ticket revenue is therefore:

    $(€15 + €20) \times 150K = €5.25M$

12. b

    On average, 50% of passengers have a sandwich (€4) and a soda (€1), 30% only a soda and 20% nothing, therefore the average food & drink revenues per passenger is: $((€4 + €1) \times 50\%) + (€1 \times 30\%) + (€0 \times 20\%) = €2.8$

MED-LINES CASE
ANSWERS 1 TO 23

13. c

    The food & drink revenue per trip is the average food & drink revenue per passenger (€2.8) multiplied by the number of passengers. During the summer months, occupancy is 90% for a 600-passenger ferry. Therefore, the food & drink revenue per trip is: $€2.8 \times 90\% \times 600 = €1{,}512$

14. e

    The prices of food & drink items cannot be easily increased (government approval needed) so the answer would not be a. Decreasing the price would actually reduce the ferry operator's revenue (though we do not know the potential volume effect) so the answer is not b. Answers c and d could potentially increase revenue (passengers could tend to consume slightly more if they have more variety or if their ticket was cheaper) but there is not enough information to prove it would actually be effective. Renegotiating the contract with the cafeteria operator is much more likely to be effective, especially because the current share of revenue (20%) is quite low. Therefore e is the correct answer.

15. d

    A truck ticket costs 10 times as much as a passenger vehicle ticket and a truck only takes as much space as 5 vehicle tickets, so it is much more profitable to sell truck tickets. Maximum revenue will be obtained if only truck tickets are sold (20 tickets) and minimum revenue if only passenger vehicle tickets are sold (100 tickets). Knowing that a truck ticket costs 10 times as much as the €20 passenger vehicle ticket, we can calculate: $\text{Maximum revenue} = 20€ \times 10 \times 20 = €4{,}000$
    $\text{Minimum revenue} = 20€ \times 100 = €2{,}000$

MED-LINES CASE
ANSWERS 1 TO 23

16. d

In the summer months, cabin tickets are sold out and cost 50% more than deck tickets, so revenue from cabin tickets is:

$$100 \times 1.5 \times \text{price of a deck ticket}$$

Revenue from deck tickets is the price of a deck ticket multiplied by the number of deck tickets sold. Knowing that the occupancy rate is 90%, the number of deck tickets can be calculated using the following equation:

$$100 + \text{number of deck tickets} = 90\% \times 600 = 540$$

Therefore the number of deck tickets is 440. So revenue from deck tickets is: $440 \times \text{price of a deck ticket}$

The ratio of revenue from deck tickets to revenue from cabin tickets is therefore: $\frac{440 \times \text{price of a deck ticket}}{100 \times 1.5 \times \text{price of a deck ticket}} = \frac{440}{150} \approx 2.9$

MED-LINES CASE
ANSWERS 1 TO 23

17. d

Data provided in document 4 show that, combined, the 3 ferries transported 50+200+50=300 vehicles in 2007, but these vehicles can be passenger as well as trucks; therefore statement 1 is not correct.

The revenue per passenger can be calculated by dividing the total revenue by the number of passengers, i.e.:

$$\frac{100}{320} \approx 0.31 \text{ per 1K passengers for type 1 ferry}$$

$$\frac{220}{420} \approx 0.52 \text{ per 1K passengers for type 2 ferry}$$

$$\frac{150}{270} \approx 0.56 \text{ per 1K passengers for type 3 ferry}$$

Therefore, statement 2 is correct.

Likewise, revenue per round-trip can be calculated as follows:

$$\frac{100}{200} = 0.5 \text{ for type 1 ferry}$$

$$\frac{220}{200} = 1.1 \text{ for type 2 ferry}$$

$$\frac{150}{300} = 0.5 \text{ for type 3 ferry}$$

Therefore statement 3 is correct.

MED-LINES CASE
ANSWERS 1 TO 23

18. c

    Type 1 and type 3 ferries have the same revenue per trip and type 1 ferry has a higher cost per trip, therefore the answer cannot be a.

    Type 2 ferries have higher revenue per trip than type 1 ferries and 200% higher cost per trip, therefore c is the correct answer.

19. c

    Statement 1 does not affect the Athens-Crete route traffic as roads cannot be used as an alternative to travel between the 2 locations. Statement 2 is a past fact; the future traffic will only be impacted by future GDP growth. Hydroplanes could be an alternative to ferries for tourists; therefore statement 3 is correct. Pricing and loyalty programs are usual market drivers that have an impact on traffic; since they are being implemented, the effect is expected in the near future, and therefore statement 4 is also correct.

20. c

    The total growth for year n can be calculated as $(1 + x\%)^n - 1$ where x is the annual growth rate; therefore total growth in 4 years with a 10% annual increase is: $(1 + 0.1)^4 - 1 \approx 46\%$

MED-LINES CASE
ANSWERS 1 TO 23

21. c

Data from document 5 shows that the proportion of merchant vessels has increased, especially in the 2000–2002 period. These vessels are used to transport goods worldwide so answer c is the most likely statement explaining the trend (India's and China's booming economies translated into increased exports). Answers a and b are focused on events following 2003. Answer d mentions the capacity production, which is the supply side of the market, and a consequence of the order book (demand).

22. d

Italian Seaways seems to have relatively high activity in winter compared to what could be normally expected for a ferry company. A possible explanation would be that Italian Seaways transports winter fruits between Italy and Greece, for example via long-term contracts (answer d). Answer a would tend to increase revenues in the summer, not in winter. Total revenue per trip is constant throughout the year, so answer b is not correct. Answer c only shows that activity in winter is lower than in summer, which we already know. By raising prices, there is a high risk that volume of tickets sold will steeply decrease so answer e is not correct.

23. d

All else being equal, if more and more tourists switch from ferries to airplanes, traffic on the Greece–Italy route will decrease without any link to international tourist arrivals; therefore answer a is a possible explanation for correlation decrease. If more and more tourists arriving in Greece come from outside North and Central Europe, this means that less come from Italy in proportion, meaning that the traffic on the Greece-Italy route will not increase proportionally to international arrivals; therefore statement b is correct. If more and more tourists arriving in Greece tend to go less to Italy, the correlation between Italy-Greece ferry route traffic and international tourist arrivals will also decrease; therefore, statement c is also correct.