



Problem Solving - Section 1

BMAT Course Book



Section 1 Tips



Mock Questions



Step-by-Step Guides



Detailed Explanations

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Introduce yourself to this part of BMAT Section 1. Understand the skills required to succeed.

Problem Solving

With **Problem Solving** questions, you are required to apply reasoning using several **spatial** and **numerical** skills. There are many different problem solving questions which can come up, and we can split them up into three types. The majority of questions will require at least one of the three skills below.

1. Understanding corresponding occurrences

Here you will be given a piece of information in the question, and you will be asked to identify which of the answer options best matches this piece of information. You will therefore have to recognise that the correct answer will be the one that is the most similar to the piece of information that you have been presented with. This will test your reasoning through **spatial skills**.

2. Choosing the appropriate information

In these questions, they will present you with a great deal of information and you will have to use your deductive skills to decide which aspects of information are relevant and which aspects of information are there to distract you and waste your time.

3. Applying the relevant methodology

After identifying the relevant information, you will have to apply the right method and procedure to answer the question. This can often be difficult as there could be several potential methods and so you will have to identify what the most efficient way of forming an answer is. Deductive and spatial skills are required here.

Date and Time Questions

Lessons 16, 17, 18



Learn how to tackle questions based on years, seconds, times and dates.

Date and Time Questions

In the questions, you are presented with a scenario involving different groups of people, and you will be required to use the information presented to you to answer the scenario.

You need to be familiar with important details such as the number of days in each month, and be able to use mental arithmetic wherever possible to save time. We will go through some key examples which are representative of questions that have come up in the past.

Key facts to remember

365 days in a year

366 days in a leap year

1 day = 24 hours

1 day = 1440 minutes

1 day = 86400 seconds

Months with 31 days

January

March

May

July

August

October

December

Months with 30 days

April

June

September

November

Months with 28 days in a common year and 29 days in leap years

February

The knuckle trick

1. Make a fist with either of your hands (this can face away from you or towards you)

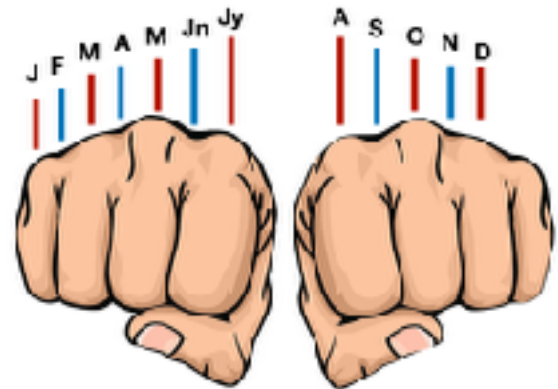
Lesson 16, 17, 18

2. Tap on each of your knuckles and the wells in between

Your knuckles (higher up than the wells in between) represent the months with 31 days.

Higher up = higher number of days.

The wells in between represent the months with 30 days (lower down = lower number of days)



All you really have to remember is that February only has 28 days (or 29 in a leap year).

Looking for the same dates

- If a question asks you to look for the number of weeks in a year, find a difference that is divisible by 7.
 - If you are looking to find two dates that fall on the same day of the week, the number of days between these two dates must be a multiple of 7. For example, if you are comparing Sunday 14th February 2016 to Sunday 11th February 2018, you immediately know the number of days is a multiple of 7.
 - If a question asks you to look for months of the year, find a difference that is divisible by 12.
-

Dates and Times Question 1

Four friends, Jack, Ni-Yung, Sophie and Lisa are all guessing each others birthdays. Their birthdays are on the 114th, 163rd, 172th and 129th days of the year.

Which two friends have their birthdays on the same day of the week as each other every year?

- A. Jack and Ni-Yung
- B. Jack and Sophie
- C. Jack and Lisa
- D. Ni-Yung and Sophie
- E. Ni-Yung and Lisa
- F. Sophie and Lisa

Dates and Times Question 2

Four friends called Max, Mark, Julie and Jennifer are guessing each other's birthdays. They are all born in the same calendar year, on the 21st of each month. Coincidentally, their names begin with the first letter of the month they were born in.

Max and Julie's birthdays are four months apart.

Mark and Jennifer's birthdays are one months apart.

How far apart are Julie and Mark's birthdays?

- A. 1
- B. 2
- C. 3
- D. 4
- E. 5

Dates and Times Question 3

Mary Berry is baking cookies for her TV show. She makes the cookies in batches of 6, and it takes her 30 minutes to prepare a set of 6 cookies. She then puts them in the oven for 20 minutes and during this time, she can work on the next batch. Once she has finished baking the cookies, she leaves the cookies out for 5 minutes and has to monitor them to see when it has been 5 minutes. She is making 30 cookies.

If she starts at 2pm, what time will she finish?

- A. 5:15pm
- B. 5:40pm
- C. 6:15pm
- D. 6:50pm
- E. 7:00pm
- F. 7:15pm

Dates and Times Question 4

Glynnis received a digital clock for her birthday that shows the date and time.

Glynnis observed her clock, as shown on the right. She noticed that all the numbers on her clock were cube numbers. She realised that this had just occurred twice before in the same hour, and that this was the last time it would occur this year. She will have to wait until January for it to occur again.

08:27
27/08

In January, how many times will Glynnis' clock display just cube numbers and zeros?

- A. 18
- B. 22
- C. 26
- D. 30
- E. 34

Dates and Times Question 5

A nurse is going through some spreadsheets to find the reference number for a baby born in the ward. Each baby is given a 8 digit reference number.

For example: 15724425

For example, the reference number above is for the 42nd ever baby born at the clinic on 24th October 2004. 157 represents 157 months since the first baby in the clinic was born, 24 represents the day the baby was born. The last number represents the last value of what the previous 8 digits add up to i.e. $(1 + 5 + 7 + 2 + 4 + 4 + 2 = 25)$.

Which one of these is a correct reference number for a baby born in the ward?

- A. 19231174
- B. 19431468
- C. 19531504
- D. 19631639
- E. 20031234



Dates and Times Question 6

Medic Mind is giving its employees a free drink to each of their mentors. Alice is working every day of the week, but takes Saturday and Tuesday off. But to get this free drink he needs to use his Medic Mind Map.

Each day she finishes mentoring, Alice gets 4 stamps on her map and she can use a certain number of these stamps for many things including a free drink. The number of stamps required for this drink does not change.

On the morning of Sunday 3rd, Alice has 14 stamps on her map. She is always dehydrated and therefore tells herself that whenever she has the stamps she will get the free drink.

The first day that Alice is unable to get a drink is the 10th . Every day until then she buys one.

What day of the week will it be the second time she is unable to buy one?

- A. Monday
- B. Tuesday
- C. Wednesday
- D. Thursday
- E. Friday
- F. Saturday