

Preparing for Aptitude Tests

Career Skills

Paul Newton



PAUL NEWTON

PREPARING FOR APTITUDE TESTS CAREER SKILLS

Preparing for Aptitude Tests: Career Skills

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PREFACE

This eBook describes management aptitude tests including: numerical, verbal, abstract, and spatial reasoning tests. These tests often form part of the job selection process and are designed to assess your ability to communicate and solve numerical and logical problems.

You will learn:

- How and why organizations incorporate aptitude tests into their management selection processes.
- Why even a small improvement in your score can result in you being perceived as a much more capable candidate.
- What types of questions you will be expected to answer in each test.
- Where to find free practice questions that will allow you to get all the practice you need to succeed at these types of test.

INTRODUCTION

Organizations are putting more time and money into the recruitment process than ever before. The personnel industry press quotes a typical cost of \$10,000 to recruit a management-level candidate. Some of this can be accounted for by the cost of advertising the role, but the majority is made up of specifying the role and then selecting the best possible candidate to fill it. From the perspective of an organization this has meant the introduction of various tests and exercises to ensure that they learn as much about the individual as possible to ensure the best fit with the role.

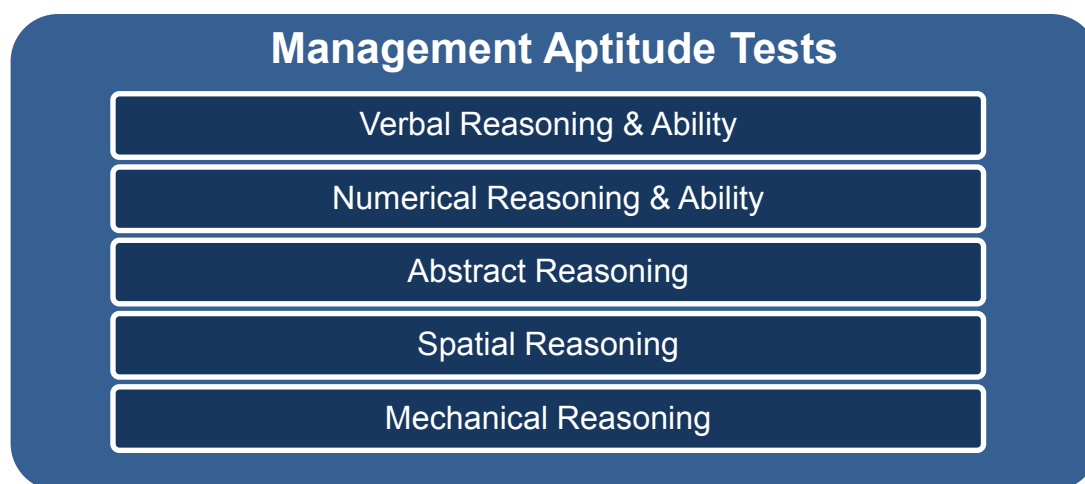


The chart above shows you some of the most popular tests and exercises used when assessing potential management candidates. Traditional format interviews where you talk about your competencies and achievements are increasingly complemented by tests and exercises where you are required to show what you do rather than just talk about it.

Some selection exercises like in-tray and role play are designed to mimic certain aspects of the job you will be expected to do. Others, such as personality tests and aptitude tests, seem rather more arbitrary. However, employers have good reasons to use both. Personality tests are dealt with in detail in the 'Preparing for Personality Tests' eBook available from the [Career Skills](#) area of our website.

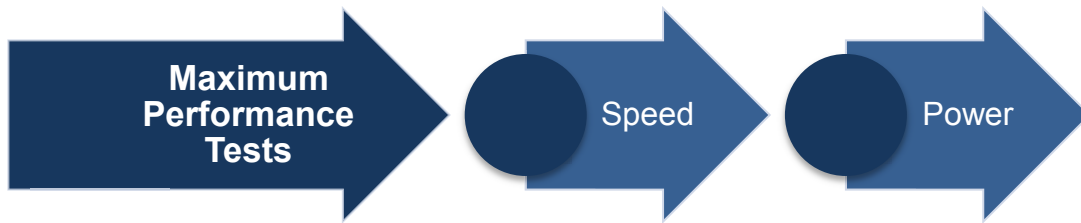
This eBook is designed to help you prepare for aptitude tests, which are used to test your logical reasoning and thinking abilities. These tests are made up of between 30–50 multiple-choice questions and are strictly timed. Whether taken online or in an office it is vital that you give them 100% of your concentration.

Prepare for them as you would any exam and you will gain the high score you need to stand out from the crowd. Practice and familiarity with the type of questions asked in each kind of test is extremely important because it will save you wasting valuable time working out what the question is asking rather than working out the answer.



The most commonly used aptitude tests are:

- **Verbal Reasoning and Ability** – this test assesses your level of grammar and spelling capability, as well as your ability to understand analogies and follow detailed written instructions.
- **Numerical Reasoning and Ability** – looks at how good your basic mathematical skills are including number sequences. It also gauges your reasoning skills of more complex numerical questions and how well you interpret quantitative information.
- **Abstract Reasoning Tests** – assess your ability to identify the logic of a pattern to determine the next in the sequence or the missing item. These tests determine your logical thinking skills.
- **Spatial Ability Tests** – are designed to evaluate your ability to manipulate two-dimensional shapes. They also assess your capacity to visualize two-dimensional pictures as three-dimensional objects.
- **Mechanical Aptitude Tests** – these tests are very specific to technical roles and are not included in general management tests as they assess an individual's knowledge of physical and mechanical principles. (Further information on [mechanical tests](#).)



Aptitude tests frequently have more questions than most people can be easily answer in the time allocated and the complexity of the questions may also increase as you work through the test. They are designed to see what you can achieve when maximizing your efforts and take two forms as shown in the diagram above.

- **Speed tests** – focus on how many questions you can answer correctly in the time allowed. For example:
 Question: $139 + 235 =$
 A) 372 B) 374 C) 376 D) 437
- **Power tests** – focus on your ability to identify the ‘best’ strategy for answering the question and obtain the correct answer. For example, you will be presented with a table of sales figures to use to answer the questions:

Server	January		February		March	
	Units	\$	Units	\$	Units	\$
ZXC-43	32	480	40	600	48	720
ZXC-53	45	585	45	585	45	585
ZXC-63	12	240	14	280	18	340

Question: In which month was the sales value highest?

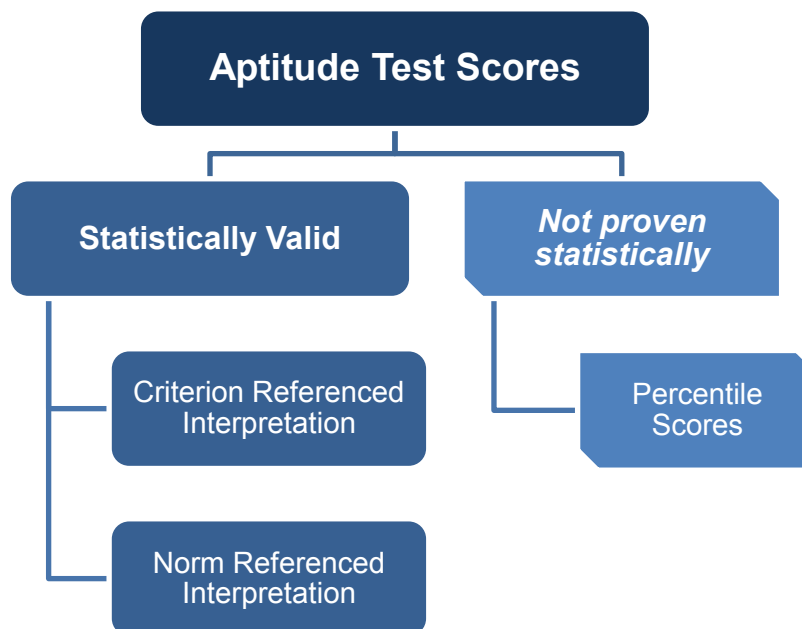
- A) January B) February C) March

Question: What is the unit cost of server type ZXC-53?

- A) 12 B) 13 C) 14

Practice tests will enable you to become familiar with these types of tests and attain the best score possible.

Employers use your test scores to gauge how well your competencies and capabilities match those required by the role. Knowing how these scores are interpreted helps you appreciate how important improving your score is to be selected to continue in the recruitment process.

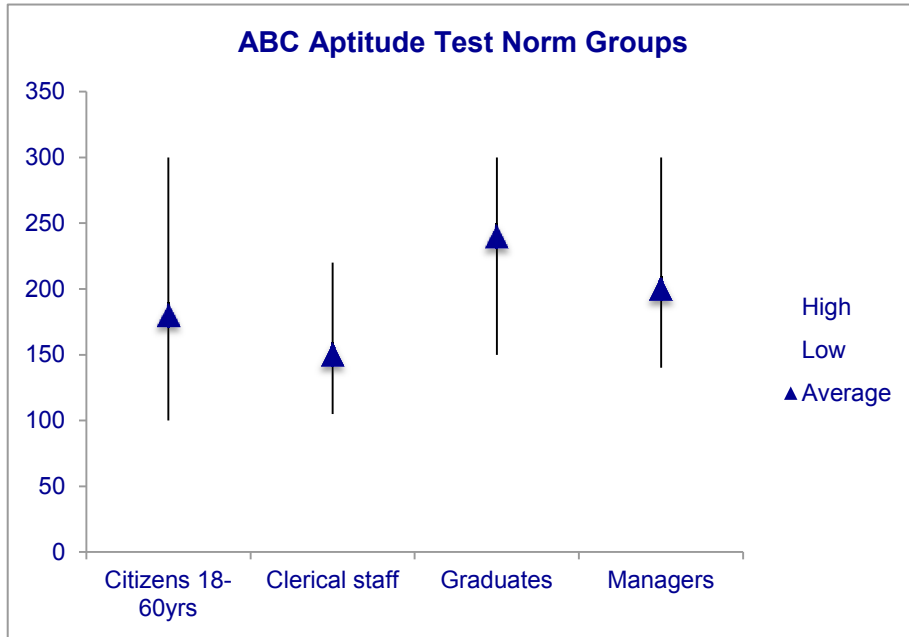


There are two statistically proven methods – criterion-referenced interpretation and norm-referenced interpretation and a third method – percentile scores – that is not statistically valid but used by organizations when proficiency standards and norms are not available.

- **Criterion-Referenced Interpretation** – in tests using this method your score reflects your level of knowledge or skill in the test area. It does not compare your score to those attained by others.

The organization or test publishers set a score to reflect a minimum level of competency required for a role that is then converted into proficiency standards.

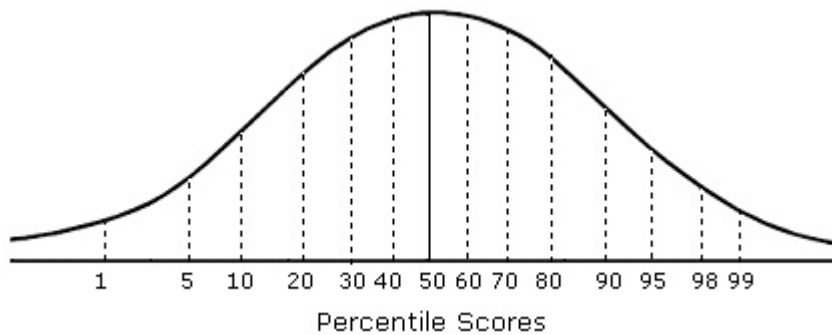
- **Norm-Referenced Interpretation** – this method compares an individual's scores with that of a norm reference group. This norm group is made up from a large representative sample of people. It is their score average and distribution that become the test norms.



The chart shows the wide variation between groups’ abilities and qualities, whilst emphasizing the importance of the norm group you will be compared to. A norm group will be selected that best matches the educational and cultural backgrounds including other characteristics of the test group.

- **Percentile Scores** – are not statistically valid as they simply compare your score with that of the other candidates. This method is used when no appropriate proficiency standards are available. As they are easy to understand this type of score is commonly used when candidates are being compared to one another.

To calculate a percentile score an individual’s raw score is represented as a percentage of the group who scored below them. For example, if your raw score is higher than 60% of the group your score is in the 60th percentile.



This method tends to exaggerate differences close to the mean and minimize those at the extremities. What this means for someone taking tests scored in this way is that each extra point you can add to your score will have a significant impact on your percentile score.

For example, imagine that a group of graduates with similar backgrounds score between 35 and 45 out of 50 questions, and the mean score is 40. In this scenario a score of 40 is in the 50th percentile whereas a score of 45 is in the 90th percentile. In other words, five extra marks would take you from being 'average' to being 'outstanding'.

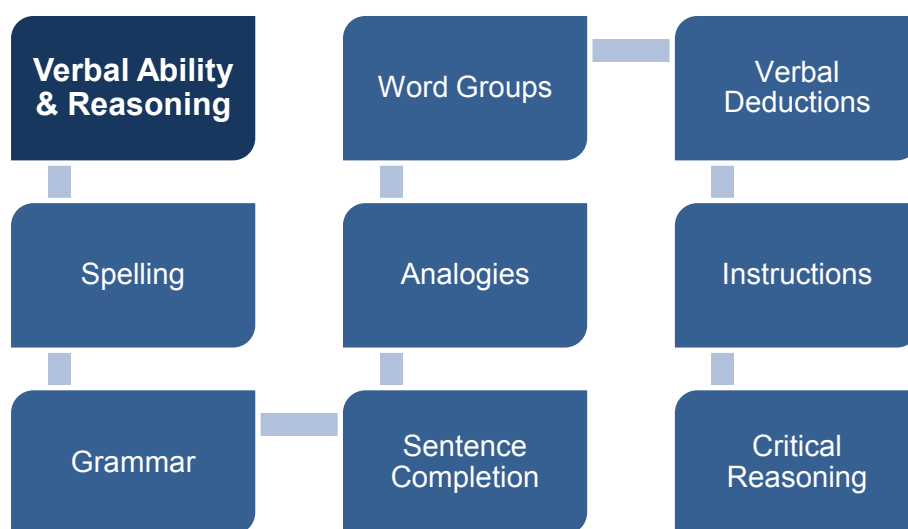
This illustrates one of the problems of using percentile scores with such a small and homogenous group, and an experienced statistician would realize that ranking candidates in this group by percentile was inappropriate and misleading. However, percentile scores are often used this way, which is why it is so important to get every mark you can in these types of test.

Key Points

- Organizations use various tests and exercises as part of the management selection process.
- Aptitude tests are used to test your logical reasoning and thinking abilities.
- They usually contain between 30–50 multiple-choice questions and are strictly timed.
- Verbal ability tests are used to assess your grammar and spelling, as well as your ability to understand analogies and follow detailed written instructions.
- Numerical reasoning tests look at your mathematical skills and your ability to interpret quantitative information.
- Abstract reasoning tests assess your ability to identify the logic of a pattern and determine the next in the sequence or the missing item.
- Spatial ability tests are designed to evaluate your ability to manipulate two-dimensional shapes and your capacity to visualize two-dimensional pictures as three-dimensional objects.
- Mechanical aptitude tests are very specific to technical roles and are not included in general management tests.
- Speed tests focus on how many questions you can answer correctly in the time allowed, whereas power tests focus on your ability to identify the 'best' strategy for answering the question.
- The common misuse of percentile scores mean that even a small improvement in your actual score can make you look like a far more capable candidate.

1 VERBAL ABILITY AND REASONING TESTS

These tests are designed to assess your ability to understand and conduct written communications. Verbal ability questions involve spelling, grammar, sentence completion, analogies, and comprehension. When they are being used for management selection, these tests usually focus on higher-level skills like critical reasoning and analogies.



However, unless you know in advance that this is the case, it is worth ensuring that you re-familiarize yourself with the definitions and correct spellings of commonly misused words because this is an essential part of effective communications.

Spelling Questions

Focus on the most commonly mis-spelt words, for example. The answer is shown in bold.

- Which of the following words are incorrectly spelt?
 A) separate B) ordnance C) obviously **D) sucess** E) none of these
- Choose the pair of words that best completes the sentence
 The ----- of the timetable caused some -----
 A) rivision **B) revision** C) reversion D) revition
 A) inconvenience B) inconveninece
 C) inconvenceince D) inconveniance

3. Highlight the incorrectly spelt words from this list.
- | | |
|-----------------|----------------|
| A) occurence | K) acidently |
| B) dissipate | L) liaison |
| C) weird | M) memento |
| D) accommodate | N) millenium |
| E) embarassment | O) yield |
| F) ecstacy | P) existance |
| G) repetition | Q) independent |
| H) batallion | R) insistant |
| I) dispair | S) excede |
| J) irritable | T) privilege |

The use of computers and devices that automatically correct our spelling means that our spelling skills have deteriorated, but practice tests will quickly restore this ability.

Missing Word Questions

These questions look at the level of understanding of the exact meaning of words used in your vocabulary. These types of questions use a multiple-choice format for your answers to aid test takers to complete the majority of the test. Some examples are shown below, with the answer in bold.

4. Which of these words completes the sentence in the way that makes most sense?
A spirit-level should be used to ensure that the surface is -----
 A) straight **B) flat** C) horizontal D) parallel E) aligned
5. Which of these words completes the sentence in the way that makes most sense?
He avoided ----- because he was ----- (answer C & B respectively)
 A) redundancy **B) indispensable** C) redundancy D) indispensable
6. Which of these words completes the sentence in the way that makes most sense?
The plan must be ----- to make the project ----- (answer B & A respectively)
 A) feasible **B) revised** C) rivised D) feasible

It is important to take care when reading the sentences to ensure you select the most appropriate word. This is because it can be testing either: your spelling skills, your understanding of how best to use a specific word, or both.

Related Word Questions

These questions are designed to assess your reasoning skills as well as the extent of your vocabulary. You need to be familiar with the exact meaning of words to ensure you establish the correct relationship. By practicing this type of question you will be able to more easily recognize the required relationships, as shown in the questions below (answers are in bold).

7. Which of these is the missing word?

kick, -----, walk

A) throw B) toes C) shin **D) feet** E) hand

(feet are used for both kicking and walking)

8. Which of these is the missing word?

key, -----, walk

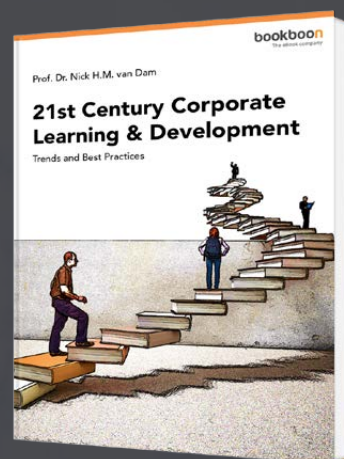
A) lock B) stand **C) board** D) fob E) stone

(board forms the words 'keyboard' and 'boardwalk')

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9. Which of these is the missing word?

water, -----, over

- A) ice B) drive C) wet D) flow E) fall

(fall forms 'waterfall' and 'fall over')

These questions assess how carefully you read the words in front of you and discern the correct meaning – an essential part of communication for managers.

Synonym and Antonym Questions

These questions use another way to assess your ability to discern the exact meaning of words and the breadth of your vocabulary. The sample questions below ask you to select the appropriate synonym (same meaning) or antonym (opposite meaning). The answers are in bold.

10. Which two of these words are opposite in meaning?

- A) lose **B) winner** C) victor **D) loser** E) vanquish

(exact opposites)

11. Which of these words is the odd one out?

- A) swindle** B) harass C) provoke D) annoy E) pester

(the others are synonyms)

12. Which of these words is the odd one out?

- A) verify B) authenticate C) confirm **D) ask** E) substantiate

(the others are synonyms)

Word Pair Questions

This group of questions measures your ability to recognize a relationship between two words. Mentally repeating the question to yourself is a useful technique enabling you to recognize relationships more quickly. Practicing this will make a significant difference to your speed and accuracy. The answers to the sample questions are shown in bold.

13. Dog is to canine as wolf is to -----

- A) vulpine B) ursine C) piscine D) bovine **E) lupine**

(lupine means 'relating to the characteristics of wolves')

14. Sadness is to happiness as defeat is to -----
A) joy B) victory C) tears D) victor E) none of these
(the word pairs are opposites)
15. Paper is to timber as ----- is to hide
A) tree B) seek C) ox D) animal E) leather
(paper is made from timber, leather is made from hide)

Comprehension Questions

When tackling comprehension questions it is important to **ONLY** use the information provided in the text. Do not be tempted to bring in your own personal knowledge. Remember this type of question is evaluating your ability to extract the relevant facts.

The example below shows you the type of thing you can expect.

16. Read the following short passage and say whether or not the statements are true.
There are seven species of deer living wild in Britain. The Red Deer and the Roe Deer are native species. Fallow Deer were introduced by the Romans and, since the seventeenth century, have been joined by three other nonnative species: Sika, Muntjac, and Chinese Water Deer which have escaped from parks. In addition, a herd of Reindeer was established in Scotland in 1952. Most of the Red Deer in Britain are found in Scotland, but there are significant wild populations in south-west and north-west England, East Anglia, and the north Midlands. Red deer can interbreed with the introduced Japanese Sika deer and in some areas, hybrids are common.
- 16a. All of the Red Deer in Britain are found in Scotland.
A) true B) false C) can't say
- 16b. Red Deer can interbreed with Fallow Deer.
A) true B) false C) can't say
(You must select this answer because the passage does not tell you if this is possible, even if you know it to be false.)
- 16c. The Fallow Deer is not native to Britain.
A) true B) false C) can't say
- 16d. There are no Reindeer in England.
A) true B) false C) can't say

Verbal Reasoning Questions

These questions are popular for management recruitment because they evaluate your ability to discriminate a series of facts and then use them to resolve an issue. This is best illustrated in an example (answers are in bold).

17. Working together, Tom, Dick, and Harry need 9 hours to paint a 400 meter long fence. Working alone, Tom could complete the task in 18 hours. Dick can not work as fast and needs 36 hours to paint the fence by himself. If Tom and Dick take the day off, how long will it take Harry to paint the fence by himself?
- A) 9 B) 12 C) 18 **D) 36**

(Explanation: You are told Dick works at half the speed of Tom – the whole fence would take Tom 18 hours and Dick 36 hours. If the whole fence takes them all 9 hours then this means Tom would have painted half of it and Dick and Harry between them would have painted the other half. So the 400m fence would take Harry $9 \text{ hours} \times 4 = 36 \text{ hours}$.)

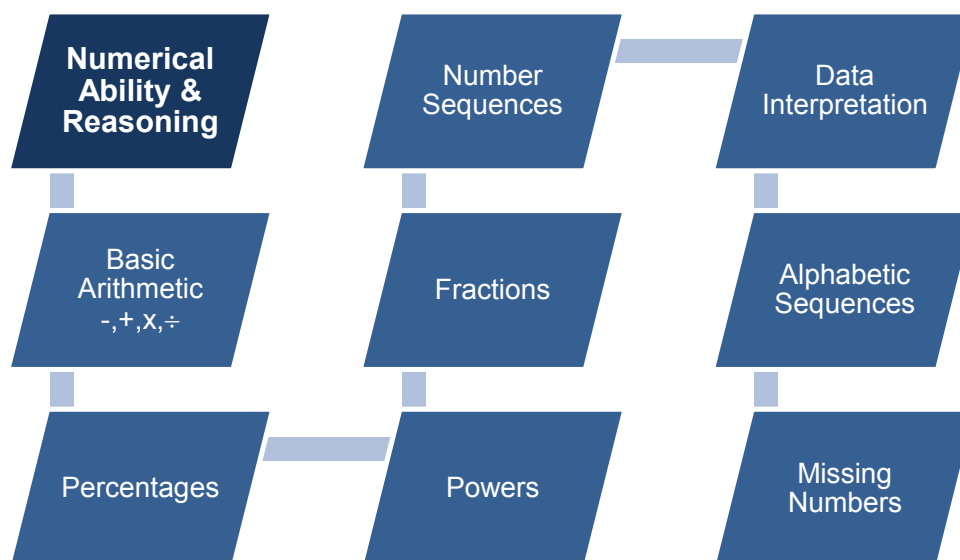
In summary, verbal ability tests are speed tests where you need to answer 30–40 questions in 15–20 minutes. They are simply testing whether or not you know the answer. Verbal reasoning tests assess your reasoning and problem-solving skills, asking between 10–15 questions with 20–30 minutes to complete them. They also gauge your ability to recognize and comprehend verbally expressed ideas and concepts. Download free [verbal reasoning practice tests](#).

Key Points

- Verbal ability questions involve spelling, grammar, sentence completion, analogies, and comprehension.
- Management-level tests tend to focus on higher-level skills like critical reasoning and analogies.
- If you are expecting a test of this type then it is a good idea to download some free practice tests and work through them systematically.

2 NUMERICAL ABILITY AND REASONING TESTS

Numerical skills are a vital part of any manager's role, so it is not surprising that numerical ability and reasoning tests are an essential element of aptitude tests. Management-level tests usually concentrate on higher-level skills like data interpretation but if you feel as though your math is a bit rusty then it is worth spending some time working through some basics to refresh your memory.



These speed tests are designed to determine your skills at basic arithmetic and mathematics including number sequences and data interpretation. You will not be able to use a calculator so practice is essential to achieve the necessary speed and accuracy to attain a high score when answering 25–35 questions in 20–30 minutes. Here are some examples of arithmetic questions (answers are in bold):

1. $139 + 235 =$
A) 372 **B) 374** C) 376 D) 437
2. $139 - 235 =$
A) -69 B) 96 C) 98 **D) -96**
3. $5 \times 16 =$
A) 80 B) 86 C) 88 D) 78
4. $45 \div 9 =$
A) 4.5 B) 4 **C) 5** D) 6

5. 15% of 300 =
A) 20 **B) 45** C) 40 D) 35
6. $\frac{1}{2} + \frac{1}{4} + \frac{3}{4} =$
A) $1\frac{3}{4}$ B) $1\frac{1}{4}$ **C) $1\frac{1}{2}$** D) $\frac{3}{4}$

Number Sequences

You will be presented with a sequence of numbers and have to identify the missing one from the multiple choices. Here are some of the more simplistic examples (their answers are shown in bold):

7. Find the next number in the series
4 8 16 32 --
A) 48 **B) 64** C) 40 D) 46
(the numbers double each time)
8. Find the next number in the series
4 8 12 20 --
A) 32 B) 34 C) 36 D) 38
(each number is the sum of the previous two numbers)
9. Find the missing number in the series
54 49 -- 39 34
A) 47 **B) 44** C) 45 D) 46
(the numbers decrease by 5 each time)
10. Find the first number in the series
-- 19 23 29 31
A) 12 B) 15 C) 16 **D) 17**
(the numbers are primes – divisible only by 1 and themselves)

Other number sequences are more complex and you have to look at the interval *between* the numbers to identify the sequence.

11. Find the next number in the series
3 6 11 18 --
A) 30 B) 22 **C) 27** D) 29
(the first interval is 3, and the interval increases by 2 each time)

12. Find the next number in the series

48 46 42 36 --

A) 32 **B) 28** C) 29 D) 30

(the first interval is 2 which is subtracted from the first number; each further subtraction increases by 2 each time)

More complex number sequences will show over four numbers so that the more complicated patterns can be figured out. See the examples below (answers shown in bold).

13. Find the missing number in the series

4 3 5 9 12 17 --

A) 32 B) 30 C) 24 **D) 26**

(this sequence starts with the fourth digit as the three previous digits are used for its and subsequent numbers in the sequence – for example, $9 = 5 + 4$, $12 = 9 + 3$, etc.)

14. Find the missing numbers in the series

5 6 7 8 10 11 14 -- --

A) 19 B) 17 **C) 15** D) 16

(**C** is first answer, **A** is second answer. This sequence is two simple interleaved sequences i.e. $5 \rightarrow 7 \rightarrow 10 \rightarrow 14 \rightarrow \mathbf{19}$. Then $6 \rightarrow 8 \rightarrow 11 \rightarrow \mathbf{15}$ – the difference increases by 1 each time.)

15. Find the missing numbers in the series

1 -- 4 7 7 8 10 9 --

A) 6 B) 3 C) 11 **D) 13**

(**A** is first answer, **D** is 2nd answer. Once again they are interleaved sequences i.e. $6 \rightarrow 7 \rightarrow 8 \rightarrow 9$ – increases by 1 each time. Then $1 \rightarrow 4 \rightarrow 7 \rightarrow 10 \rightarrow \mathbf{13}$ – increases by 3 each time.)

The most effective way to tackle these types of questions is to look for an arithmetic relationship between the numbers first and then look at intervals for a relationship. It is common when there are more than four numbers shown in a sequence that there will be two interleaved sequences. Sometimes the relationship can be in multiples, powers, divisions, or a mixture of two options.

Alphabet Sequence as Numbers

This type of sequence tests your ability to substitute a letter in the place of a number and assess your capacity to work with the unexpected. If you see any of these sequences make sure to write down the alphabet with the numbers below to help answer these questions quickly and efficiently.

Alphabet Sequences																									
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Remember that these sequences may interleave and that in all cases the alphabet will loop back around in a continuous loop. This is illustrated by the examples below (answers shown in bold).

16. Find the next letter in the series

B E H K --

i) L ii) M **iii) N** iv) O

(this sequence skips two letters each time B→E→H→K→**N**)

17. Find the next letter in the series

A Z B Y --

i) C ii) X iii) D iv) Y

(this is two interleaved sequences A→B→**C** and Z→Y)

18. Find the next letter in the series

T V X Z --

i) Y **ii) B** iii) A iv) W

(this looping back sequence skips a letter each time T→V→X→Z→**B**)

Familiarity with this sort of concept will be the key to your success; the more practice you have of working in this way the higher your score will be.

Data Interpretation

You are not expected to have in-depth knowledge of the data presented; as with the verbal comprehension questions all you need to do is use the information supplied and interpret the data to answer each question. The questions are likely to have a managerial context that would assist decision making.

In this sort of question you are often permitted to use a calculator, but make sure that you mentally estimate the answer it gives you. Don't lose marks through careless keying or hitting '+' instead of '-'. Some examples of data interpretations questions are shown below (answers in bold).

Server	January		February		March	
	Units	\$	Units	\$	Units	\$
ZXC-43	32	480	40	600	48	720
ZXC-53	45	585	45	585	45	585
ZXC-63	12	240	14	280	18	340

19a. State the month with the lowest sales value.

- A) **January** B) February C) March

19b. What is the unit cost of server type ZXC-63?

- A) **12** B) 13 C) 14

19c. How many ZXC43 units could be expected to sell in April?

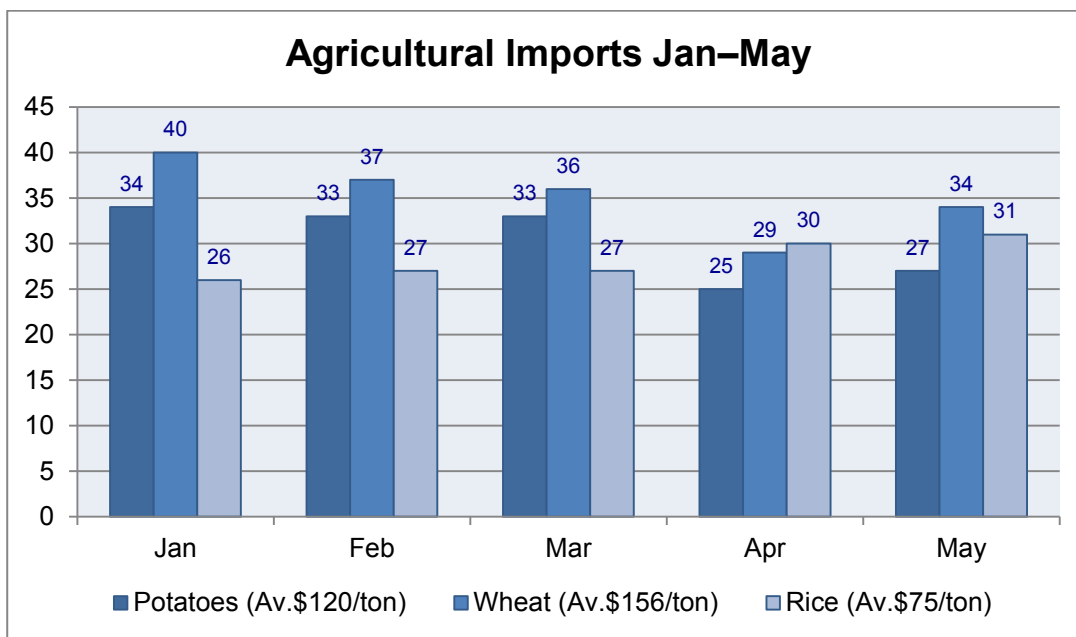
- A) **56** B) 58 C) 60

(there has been an increase of 8 units per month)

19d. Which server had its unit price changed in March?

- A) ZXC43 B) ZXC53 C) **ZXC63**

20. The following chart shows agricultural imports for January to May. Answer the following questions using the data provided. (You may use a calculator.)



20a. Which month showed the largest total decrease in imports over the previous month?

- A) March **B) April** C) May

20b. What percentage of rice was imported in April?

- A) 17% B) 19% **C) 21%**

(30 tons out of a total of 141)

20c. What was the total cost of wheat imports in the five-month period?

- A) \$27,500** B) \$25,000 C) \$22,000

(176 tons at an average of \$156/ton)

These numerical reasoning questions determine how logical and rational your approach is to interpreting data. They are designed to assess your ability to understand series of numbers, numerical transformations, relationships between numbers, and your ability to perform numerical calculation. Download free [numerical reasoning practice tests](#).

Key Points

- Management-level numerical tests usually focus on higher-level skills like data interpretation and mathematical relationships.
- If you feel as though your basic math skills are rusty then spend some time going over the basics of fractions, percentages, etc.

3 ABSTRACT REASONING TESTS

Abstract reasoning tests use diagrams, symbols, or shapes to assess how well you can establish logical relationships and can identify the underlying logic of a pattern so the solution can be identified.

Abstract Reasoning

- Missing Symbols
- Next in Sequence
- Shape & Symbol Rotation
 - Pattern Recognition
- Flow Chart Comprehension



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These tests are particularly suited to management selection because management roles involve:

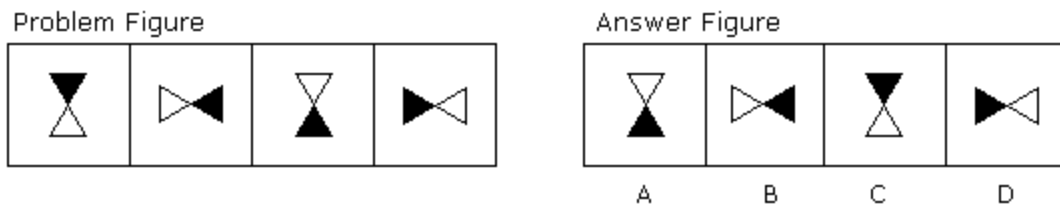
- A high degree of problem solving
- Dealing with complex data or concepts
- Developing strategies or policies
- Performing non-routine tasks where initiative is required

The inclusion of abstract reasoning tests in management selection is also popular because it does not discriminate against candidates who do not have English as their first language.

Missing Symbols and Next in Sequence

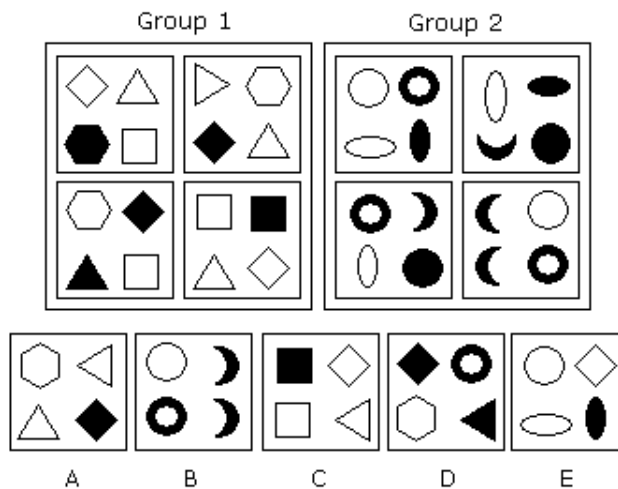
Instead of using letters or numbers in a sequence, abstract reasoning questions use a variety of shapes, sizes, colors, and patterns. The following examples show you the variety of questions you are likely to answer during this 30-minute test. Typically it will consist of approximately 20 questions giving you just over a minute for each question.

1. Which symbol in the Answer Figure completes the sequence in the Problem Figure?



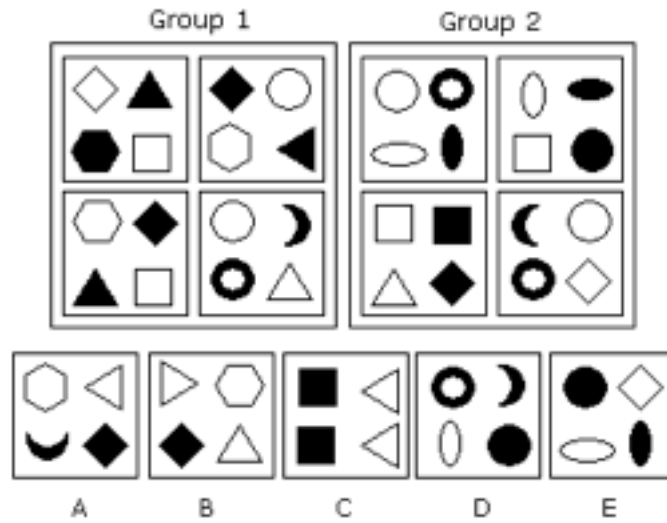
Answer = C – The figure is rotated clockwise through 90 degrees each time.

2. Which of the Answer Figures belongs in neither group?



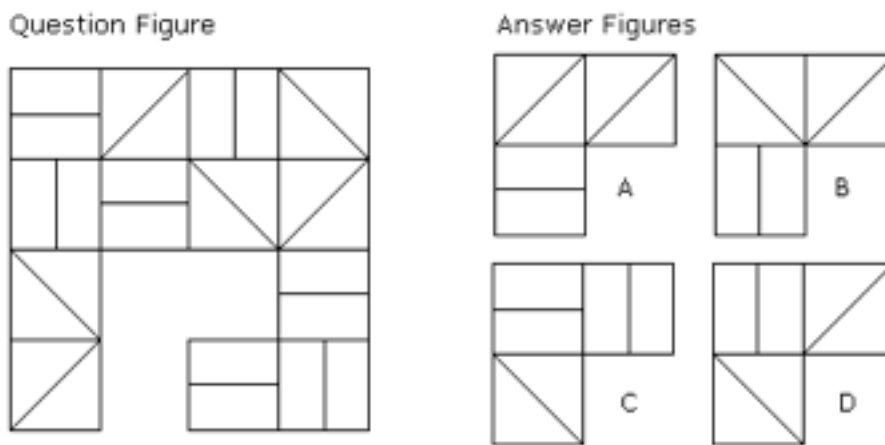
Answer = D & E – Group 1 shapes are all straight lines, Group 2 shapes are all curved.

3. Which of the Answer Figures belongs in neither group?



Answer = A, B & D – Same color shapes are diagonally opposite (Group1) or above/below (Group 2).

4. Which of the Answer Figures fits the missing space in the Question Figure?



Answer = D – each row and column contains one line of each type.

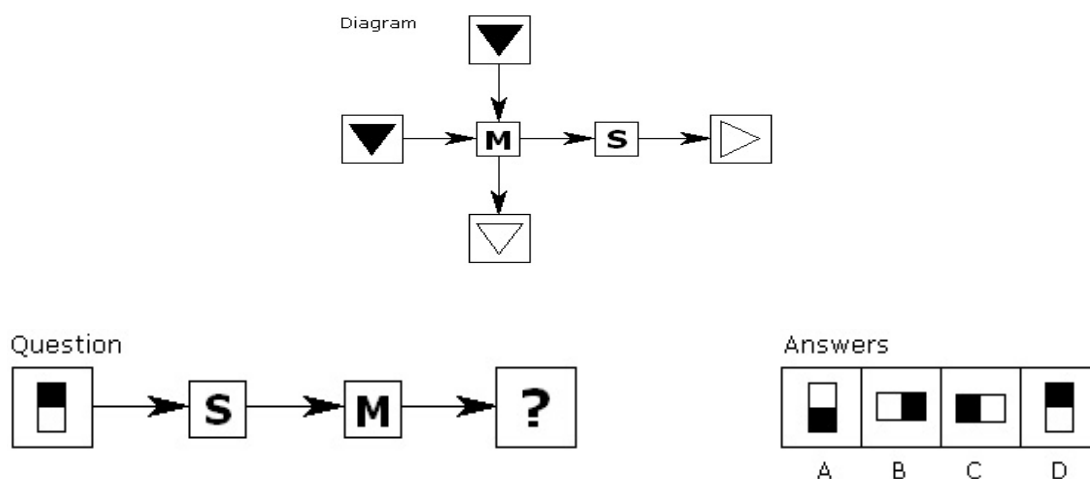
Flowchart Comprehension and Diagrammatic Reasoning

The use of flowcharts is a standard management tool and an individual’s ability to understand and infer rules from these charts is an essential skill. This is especially significant in organizations that are project based and utilize matrix management within their operations.

This type of abstract reasoning question gauges your ability to deduce the rules linked to a flowchart or diagram and then use them in a new situation.

For example:

The functions ‘M’ and ‘S’ transform the input shapes in a certain way. You need to use the diagram to determine what effect each of these functions has. Apply them to the input shape in the question to arrive at the correct output.



Answer = B – from the diagram you can infer that the function ‘M’ inverts color (black → white and white → black). Function ‘S’ rotates shapes counterclockwise through 90 degrees.

It is essential to practice these types of questions because your score will reflect your ability to handle abstract concepts and ideas. It also gives a potential employer a clear indication of your general intellectual ability and indicates how well you assimilate new information that is outside your previous experience. Download free [abstract & diagrammatic reasoning practice tests](#).

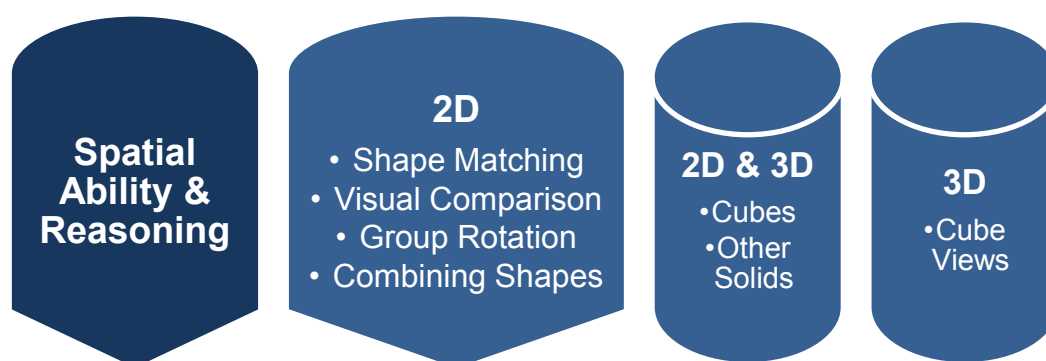
Key Points

- Abstract reasoning tests assess how well you can establish logical relationships.
- They do not discriminate against candidates who do not have English as their first language.
- They are well suited to management selection because management roles often involve problem solving at a conceptual level.

4 SPATIAL ABILITY TESTS

These questions evaluate how well you can visually manipulate and assemble two-dimensional (2D) and three-dimensional (3D) shapes as described in the diagram below. Spatial ability can be defined as:

‘The ability to interpret and make drawings, form mental images, and visualize movement or change in those images.’



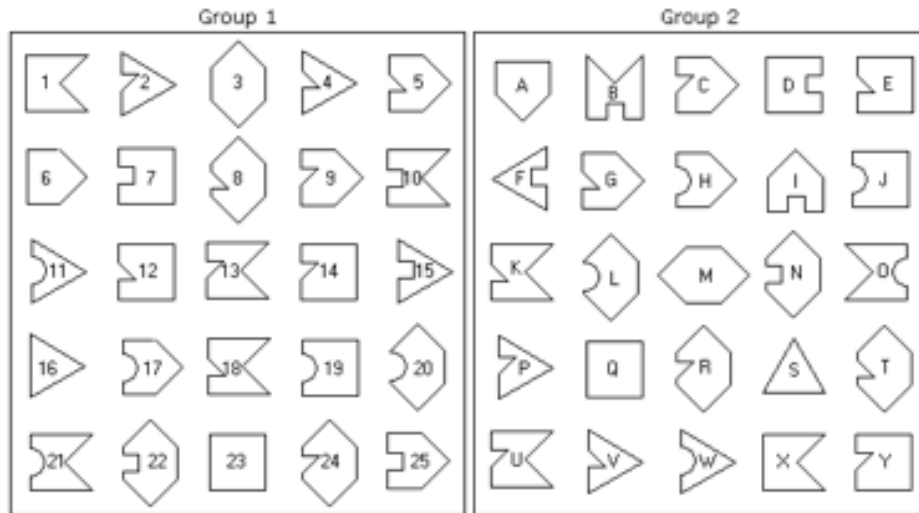
Spatial ability tests are a combination of speed and power tests, as the following examples illustrate. These types of question are often used in scientific and engineering management selection.

Shape Matching – 2D shapes

These questions require an individual to manipulate of 2D objects then they are probably fairly straightforward, but you will be challenged to answer them all in the time you are given. It is important to read the question carefully so that you understand exactly what you are being asked to identify:

- One-to-one match of shapes.
- Match shapes that have been repositioned and possibly rotated in some instances.
- Identify missing or mirrored shapes.

1. Which shape in Group 2 corresponds to the shape in Group 1?



Answers

- | | | | | |
|-------|-------|-------|-------|-------|
| 1. X | 2. P | 3. M | 4. V | 5. G |
| 6. A | 7. D | 8. T | 9. C | 10. B |
| 11. W | 12. E | 13. U | 14. Y | 15. F |
| 16. S | 17. H | 18. K | 19. J | 20. L |
| 21. O | 22. N | 23. Q | 24. R | 25. I |

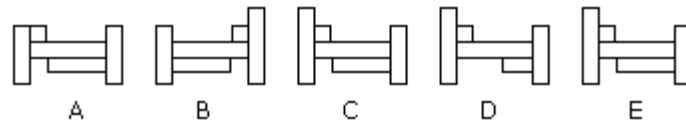
When presented with a large number of shapes as in this example many people find it distracting and stressful to answer. This is where your practice of such questions is vital to your success because it identifies your best strategy for answering it quickly and accurately. For example, you can work sequentially through Group 1 or spot the matches by visually comparing the two groups.

Visual Comparison of 2D Shapes

These questions require you to spot the only two identical objects in the selection. You need to be able to work through this type of question quickly. Two useful strategies are:

- Cover up the other questions so you are not distracted by them.
- Try to match the far left shape first and move through the row systematically until you find the pair of matching shapes.

26. Which two pictures are identical?

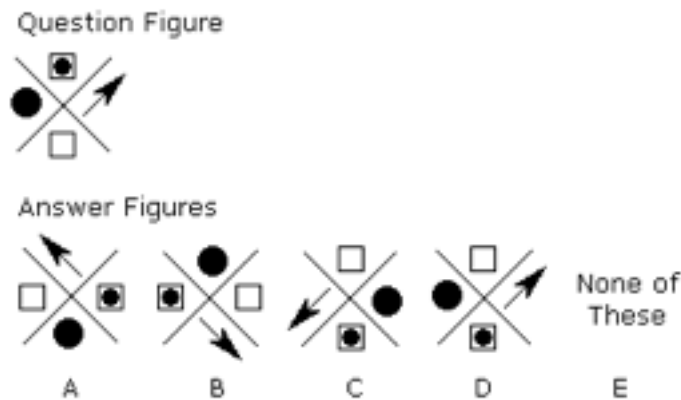


26 – C & E.

Group Rotation of 2D objects

These are more complex than the previous group. The most effective strategy is to work in terms of clockwise and counterclockwise rotations and to select one shape in the group – often the most asymmetrical shape – and find its rotation options first, and then work through the other shapes to find the answer.

27. Which of the Answer Figures is a rotation of the Question Figure?

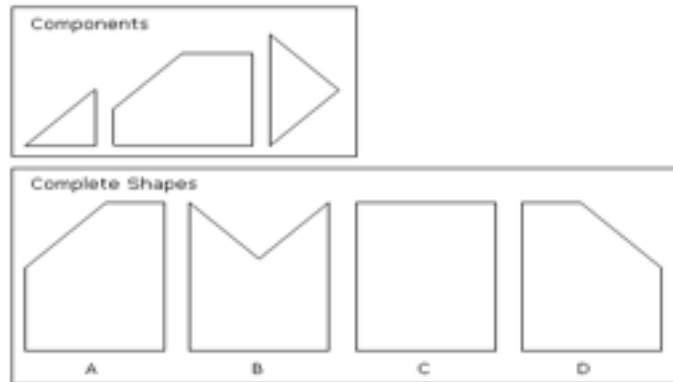


27 – C (Explanation – the white square is clockwise from the arrow. So A, B, and D cannot be rotations of the Question Figure, leaving only C which you’ll quickly check element by element to ensure you’re right.)

Combining 2D Shapes

You will be asked to put together the 2D cut pieces or components so that they make one of the complete shapes shown. The best strategy for this style of question is to look for any distinct feature that makes it impossible to construct the complete shape from the given components.

28. Which of the Complete Shapes can be made from the Components shown?



28 – B (Tip: in this example the complete shape has no sticking out parts, which tells you that the components fit together so that sides of the same length are together.)

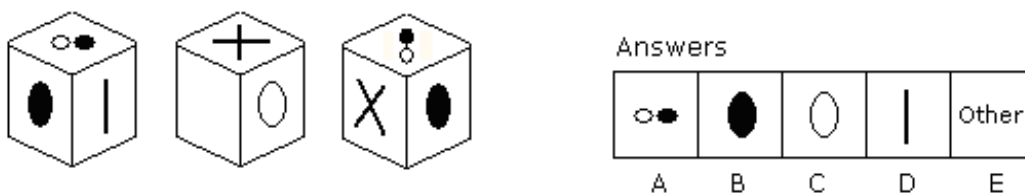


Completed Shape B can be made from the Components like this.

3D Cube Views

You are usually shown three views of a cube in 3D. Each face will have a unique symbol on it, or be blank. You will then be asked to identify the symbol opposite the stated one, i.e. which one is on the opposite face. Only by practicing such questions will you find the best strategy for you to quickly identify the answer.

29. Three views of the same cube are shown below. Which symbol is opposite the X?



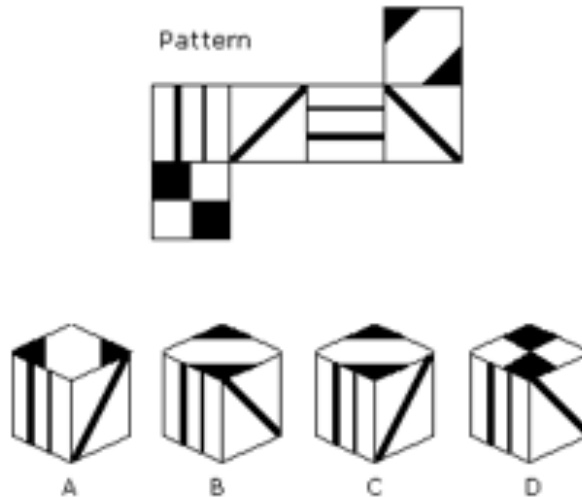
29 – D (Tip: you can eliminate the symbols A, B, and C on the cubes showing the 'X' because these cannot be opposite it. This leaves 'D' and 'other.' But as D has edges shared with A and B that are consistent with the third cube it is the answer.)

Unless it is stated in the question it is implicit that each symbol is only used once. This means that rotating a cube in a clockwise or counterclockwise direction will help find the answer.

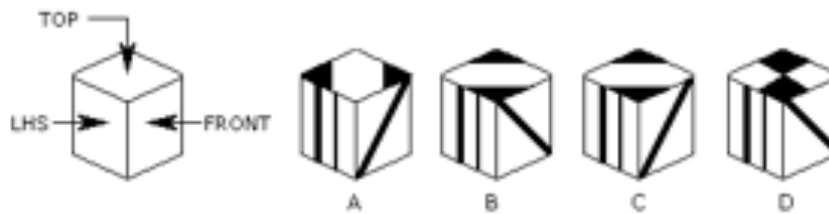
Cubes in 2D and 3D

In these questions you will be asked to make a cube up from a 2D pattern or to identify the 2D pattern that makes up the 3D cube shown. Each face will have a symbol or design on that you will manipulate in your mind’s eye to create the pattern or cube that is the answer, as shown in the examples below.

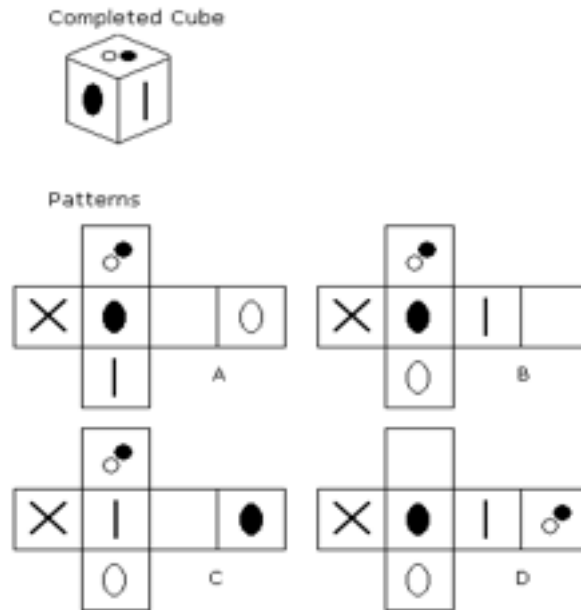
30. Which of the cubes shown could be made from the pattern?



30 – A (Tip: each answer can only show three faces of the cube so look at the relationship between these three elements and see if it is in the pattern. Name one face the top and then name the others in relation to it as shown below.)



31. Which of the patterns when folded will make the cube shown?

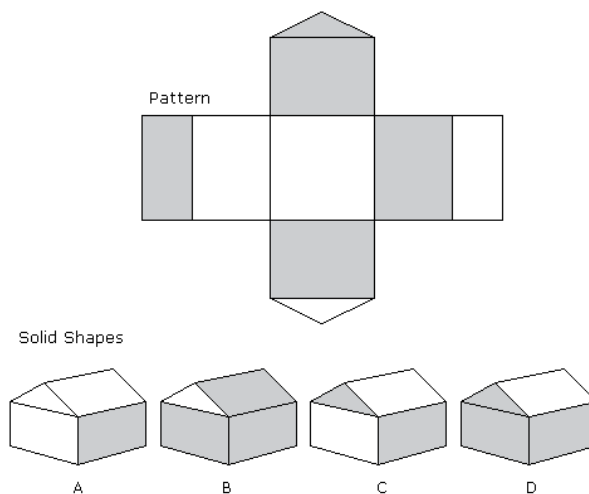


31 – B (Use the same strategy as above: name the faces and look for relationships between them.)

Other Solids in Two and Three Dimensions

In these questions you will be asked to perform the same task but using other shapes, which can be irregular. Many individuals find these questions easier than the cube ones because each face of the solid shape is different. This makes it easier to identify the relationships between them, as shown in the example below.

32. Which of the solid shapes shown could be made from the pattern?



32 – D (Explanation – A and C can be eliminated because they show an unshaded face below a triangular face. B is eliminated because it has a shaded roof above the shaded side. None of these appear on the pattern.)

Spatial tests rely on an individual's ability to visualize in their mind's eye how the 2D or 3D shape alters and this is not an innate skill that comes easily to everyone. So it is essential to practice these types of spatial ability questions because with only 20–40 minutes to answer between 20–30 questions every second counts if you want to achieve a high score. Download free [spatial ability practice tests](#).

Key Points

- Spatial ability questions evaluate how well you can visually manipulate and assemble two-dimensional and three-dimensional shapes.
- They are usually restricted to scientific or engineering management selection.

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SUMMARY

Aptitude and ability tests are designed to assess your verbal, numerical, and logical reasoning performance. They consist of multiple-choice questions that are strictly timed and administered under exam conditions. They tend to be fairly short and a typical test might allow 30 minutes for 30 or so questions.

There are literally hundreds of proprietary aptitude and ability tests on the market, but the most common ones can be classified as follows:

Verbal Ability Tests – Include spelling and grammar, and the ability to understand analogies and follow detailed written instructions.

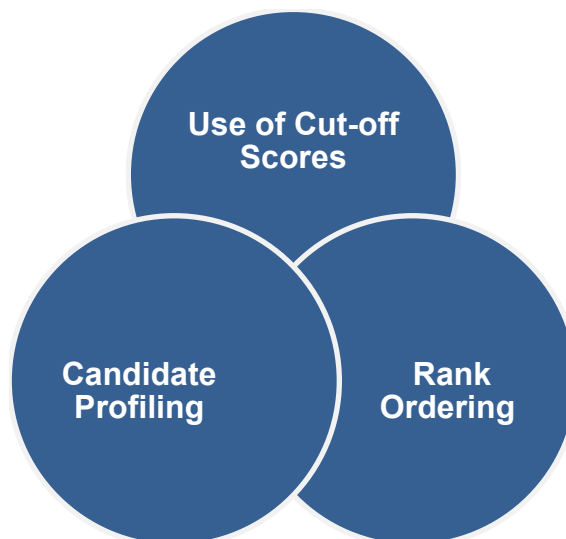
Numeric Ability Tests – Include basic arithmetic, number sequences, and simple mathematics. In more complex numerical critical reasoning questions, blocks of information are provided that require interpretation.

Abstract Reasoning Tests – Measure your ability to identify the underlying logic of a pattern and then determine the solution. They are deliberately designed so that the visual problem-solving strategy will work better than any other approach.

Spatial Ability Tests – Measure your ability to manipulate shapes in two dimensions or to visualize three-dimensional objects presented as two-dimensional pictures.

You may be asked to answer the questions either on paper or online. The advantage of online testing is that once the test is completed, an analysis of the results can be calculated straightaway. This means that the organization can continue with the selection process with the results ‘in hand’ rather than keep you waiting or send you home and call you back in at a later date. Another advantage is that you can take the test at a recruitment agency or even in your own home. Online testing is particularly suitable for initial screening as it is very cost-effective.

Whichever type of test you are given, the questions are almost always presented in multiple-choice format and have definite correct and incorrect answers. As you proceed through the test, the questions may become more difficult and you will usually find that there are more questions than you can comfortably complete in the time allowed. Very few people manage to finish these tests and the object is simply to give as many correct answers as you can.



There are three approaches organizations can adopt when making recruitment and employment decisions. They are:

- Rank ordering of test results
- Using cut-off scores
- Candidate profiling

Rank Ordering of Test Results

By simply accepting the highest-ranking scores the organization could take on candidates over-qualified for the position in times of high unemployment. Or in the opposite environment take on someone who is poorly qualified for the role even though they got one of the highest scores of their group.

Results from this approach must not be used in isolation if the organization wants to achieve a positive outcome.

Cut-off Scores

Organizations can go some way to protecting themselves by setting a minimum score for a role. Candidates who score below this will be rejected and those that greatly exceed it can be assessed to see if they are too high powered for the role.

Candidate Profiling

Using candidate profiling enables a profile of the 'ideal' person as well as a minimum test score to be used together in selecting candidates. Job specifications are usually used to produce the role profile map. Individuals' competencies will need to meet or surpass this profile to continue in the recruitment process.

Ideally, your score should then be compared with the results of a control group that has taken the tests in the past. This control group could consist of other graduates, current job-holders, or a sample of the population as a whole. Your reasoning skills can then be assessed in relation to this control group and judgments made about your ability. This does happen sometimes. Often however, your score is simply compared to the other candidates. After all, the control group is not applying for the job.

The other eBooks available in this skill set from <http://www.free-management-ebooks.com/skills-career.htm> are:

- Management Assessment
- Interview Preparation
- Answering Interview Questions
- Interview Exercises
- Preparing for Aptitude Tests
- Preparing for Personality Tests

OTHER FREE RESOURCES

The Free Management eBooks website offers you over 500 free resources for your own professional development. Our eBooks, Checklists, and Templates are designed to help you with the management issues you face every day. They can be downloaded in PDF, Kindle, ePub, or Doc formats for use on your iPhone, iPad, laptop, or desktop.

eBooks – Our free management eBooks cover everything from accounting principles to business strategy. Each one has been written to provide you with the practical skills you need to succeed as a management professional.

Templates – Most of the day-to-day management tasks you need to do have already been done by others many times in the past. Our management templates will save you from wasting your valuable time re-inventing the wheel.

Checklists – When you are working under pressure or doing a task for the first time, it is easy to overlook something or forget to ask a key question. These management checklists will help you to break down complex management tasks into small controllable steps.

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