

**LEVEL 2 AWARD**

**THINKING AND REASONING SKILLS**

**B901**

Unit 1 Thinking and Reasoning Skills

Candidates answer on the question paper.

**OCR supplied materials:**

None

**Other materials required:**

None

**Tuesday 11 January 2011**  
**Afternoon**

**Duration: 1 hour**



Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**INSTRUCTIONS TO CANDIDATES**

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Answer **all** the questions.
- Do **not** write in the bar codes.

**INFORMATION FOR CANDIDATES**

- The number of marks is given in brackets [ ] at the end of each question or part question.
- The total number of marks for this paper is **60**.
- You will be assessed on the quality of your written communication in question 15. The quality of your grammar, spelling and punctuation will affect the mark for this question.
- This document consists of **16** pages. Any blank pages are indicated.

Section A

You are advised to spend no more than 30 minutes on this Section. It is worth 30 marks.

Answer all the questions in this Section.

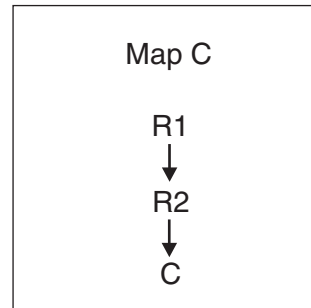
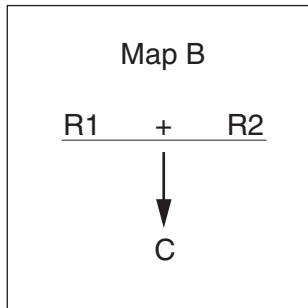
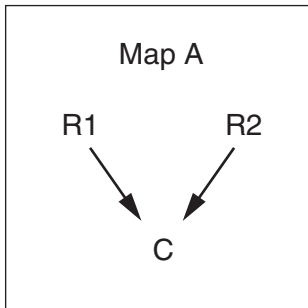
- 1 (a) Consider the argument in the box below:

Football is a good form of exercise. It is a good way of making friends and socialising. Therefore playing football is good for you.

Mark up the argument as follows:

- (i) Underline the conclusion. [1]
- (ii) Circle the indicator word. [1]

- (b) When asked to provide an argument map for the above argument three students provided the following maps:



- (i) Circle the correct map. [1]
- (ii) Explain why this is the right answer.

..... [1]

.....

2 Consider the argument in the box below:

If you don't eat your green vegetables you will not grow up big and strong. If you don't grow up big and strong you will never get a job when you are older. If you don't get a job when you are older then you will never be able to marry. So you had better eat your green vegetables!

Identify and explain the flaw in the argument.

(a) Name of flaw: ..... [1]

(b) Explanation: .....  
.....  
..... [1]

3 Romeo and Juliet plan to marry. They both need to arrive at 11am in a church which is exactly half way between their two homes. Romeo runs all the way to the church at 10 miles per hour. Juliet sets off at 9am to get to the church on time. Romeo sets off an hour later.

(a) What speed must Juliet be travelling at to reach the church at exactly 11am?

Circle the correct answer.

- 2 miles per hour
- 5 miles per hour
- 15 miles per hour
- 20 miles per hour

[1]

(b) The priest who is to marry them plans to arrive exactly on time. In order to plan his departure time which one of the following pieces of information is **sufficient**?

Circle the correct answer.

- The distance he has to travel
- The speed at which he travels
- The distance he has to travel and the speed at which he travels
- The speed at which he travels and the departure times of both Romeo and Juliet

[1]

4 The following information was collected about media reports relating to Unidentified Flying Object (UFO) sightings within the UK:

	More than 10 reports	Between 5 and 10 reports	Between 1 and 5 reports	0 reports
1. Daily Bugle between July and September	Yes			
2. Daily Bugle between November and June		Yes		
3. News on national television between July and September			Yes	
4. News on national television between November and June				Yes
5. News on local television between July and September		Yes		
6. News on local television between November and June			Yes	

Use the table above to answer questions (a) and (b).

(a) Where and when are you most likely to find or see a report about a UFO sighting?

.....  
 ..... [1]

(b) Where and when are you least likely to find or see a report about a UFO sighting?

.....  
 ..... [1]

(c) Generally, reports of sightings of UFOs in the media increase during July to September.

Give **two** reasonable explanations for this increase in reports.

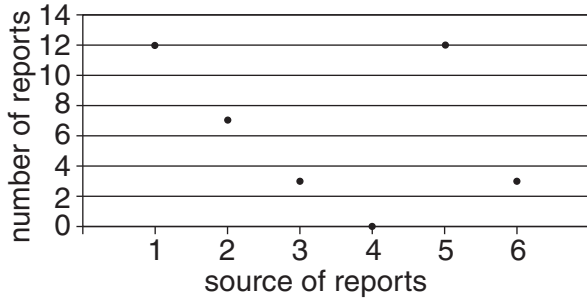
(i) Explanation 1: .....  
 ..... [1]

(ii) Explanation 2: .....  
 ..... [1]

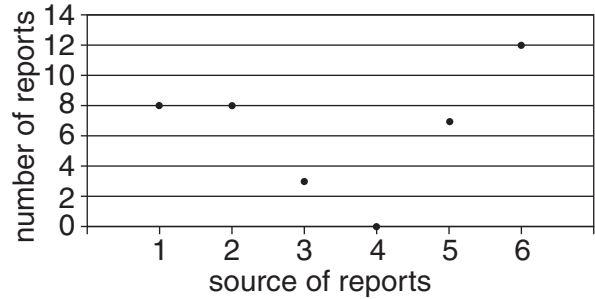
5 Students were asked to produce graphs which matched the pattern of data provided in the table in the previous question.

The students produced the four graphs below, labelled A, B, C and D.

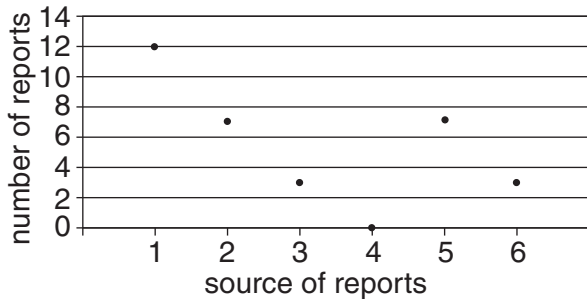
Graph A



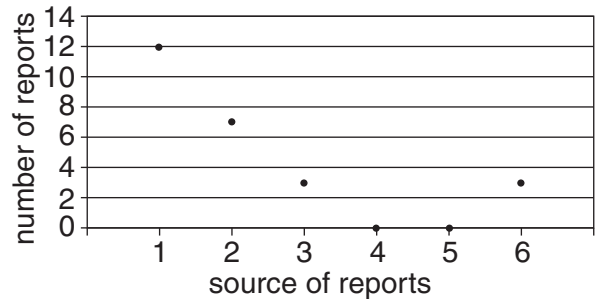
Graph B



Graph C



Graph D



The horizontal axis identifies the six different sources of reports as they are numbered in the table in question 4, e.g 1 corresponds to Daily Bugle between July and September and 2 corresponds to Daily Bugle between November and June etc. The vertical axis gives the number of actual reports.

Only **one** of the four graphs could correctly match the data in the table. Complete the following sentences.

(a) Graph A is correct/cannot be correct (delete as appropriate) because

.....  
 ..... [1]

(b) Graph B is correct/cannot be correct (delete as appropriate) because

.....  
 ..... [1]

(c) Graph C is correct/cannot be correct (delete as appropriate) because

.....  
 ..... [1]

(d) Graph D is correct/cannot be correct (delete as appropriate) because

.....  
 ..... [1]

- 6 Two female students, Adila and Cathy, and two male students, Bart and David, all enjoy **different** types of film.

Use the information provided below to identify which student enjoys which type of film.

- The girl who enjoys sci-fi lives next door to the boy who enjoys horror movies.
- The boy who enjoys horror movies socialises with Bart.
- The person who enjoys romantic comedies is a good friend of Bart.
- David has to travel by bus to see Cathy.

Use the matrix to work out the favourite film type for each student and complete the sentences below.

	Sci-Fi movies	Horror movies	Romantic comedies	Gangster movies
Adila				
Bart				
Cathy				
David				

- (a) Adila's favourite type of film is ..... [1]
- (b) Bart's favourite type of film is ..... [1]
- (c) Cathy's favourite type of film is ..... [1]
- (d) David's favourite type of film is ..... [1]

7 Joseph has recently started going out with Anne who likes cricket. The one thing about Joseph that never changes is he always likes the same things as his girlfriends.

(a) What can you work out from these facts?

..... [1]

(b) If you are later told that Joseph now hates cricket and is still going out with Anne, what can you work out from that?

..... [1]

(c) If you are later told that Joseph hates cricket and Anne still loves cricket, what can you work out from that?

..... [1]

(d) If you are told that since Joseph started going out with Anne his favourite sport has changed three times from cricket to football and then finally to rugby, what is the simplest and most plausible explanation for that?

..... [1]

8 Two walkers, Andy and Bill, intend to go walking in the desert. They each need to drink one litre of water for every mile they walk. They each have only one container to carry water and this bottle holds ten litres of water. Their plan is for Andy to walk only part of the way and to give some of his water to Bill allowing Bill to walk as far as he can into the desert while Andy returns safely to camp. Bill will not need to walk back to camp as he will be collected by a helicopter.

However, they are not sure at what point Andy should turn back and hand over some of his water to Bill in order for Bill to get as far as he can and for Andy to return safely.

They ask their friends for advice.

(a) One friend recommends both Andy and Bill walk 5 miles into the desert together and that Andy then hands over 5 litres of water to Bill enabling Bill to walk for another 10 miles into the desert.

Identify **one** problem with this advice.

.....  
..... [1]

(b) A second friend recommends both Andy and Bill walk 1 mile together into the desert and that Andy is to keep 1 litre of water in his bottle allowing him to get safely back to camp. The friend suggests Andy can now offer the 8 spare litres of water to Bill allowing Bill to walk for another 17 miles into the desert.

Identify **one** problem with this advice.

.....  
..... [1]

(c) A third friend recommends both Andy and Bill walk 4 miles together into the desert. Andy then keeps enough water to get back to base and hands what is left over to Bill.

How many miles can Bill walk from the starting point into the desert if they follow this advice?

Circle the right answer:      8 miles      12 miles      14 miles      18 miles      [1]

(d) What is the maximum distance to the nearest mile Bill can walk into the desert while allowing Andy to walk back to base safely? (Assume Andy can only walk complete miles.)

(i) Circle the right answer: 12 miles      13 miles      16 miles      18 miles      [1]

(ii) Explain how Bill and Andy can do this:

.....  
.....  
..... [2]

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**Section B begins on page 10**

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**Section B**

**You are advised to spend no more than 30 minutes on this Section. It is worth 30 marks.**

**Answer all the questions in this Section.**

Read the following documents carefully:

**Document A: Background Information**

Bewick Comprehensive is an 11 to 16 school. It has excellent GCSE results and is popular with students and parents. A school inspection report carried out by OFSTED in 2004 praised the behaviour of students at the school and commented favourably on the responsible attitude of the student council. However the new Headteacher of the school has been shocked at a recent outbreak of vandalism in the student toilets. Staff are not allowed to supervise students in the toilets, so the Head is looking into introducing CCTV cameras into the toilets to prevent further vandalism.

**Document B: Recommendations of Student Council**

We are opposed to CCTV cameras in student toilets. This is an unacceptable invasion into student privacy. If teachers aren't allowed in the toilets they shouldn't be allowed to snoop on us in this way either. No other local school does this. If this happens no parent will want their children to come here and the school will be closed down. It is also not fair. If we are going to introduce CCTV into student toilets we should introduce them into staff toilets as well! We recommend that students be appointed to supervise these areas to prevent further vandalism.

**Document C: Extract from letter to the Head written by concerned parent**

The present situation calls for urgent action. This school used to be a good school. But now the toilets have become a "no go" area. My son (Year 8) is now too frightened to use the school toilets. He tells me the older students go in there to smoke, threaten and bully the younger students and put graffiti on the walls.

**Document D: Advice from Governor of the school who is also a Judge**

Since the OFSTED inspection four years ago there is evidence of a very small number of Year 11 boys and girls misbehaving. Introducing CCTV cameras will be costly and seems a heavy-handed response to the behaviour of a few who will be leaving in six months. I think we should find a way of allowing the students to monitor and supervise their own toilets.

**Document E: Advice from experienced teacher close to retirement**

It is costly to do nothing. We have had to redecorate the toilets three times this year already. We cannot allow the students to supervise the situation. They are the cause of the problem in the first place! It is like suggesting we ask the criminal population to oversee muggings on the new estate! Moaning on about invasion of privacy is ridiculous. I don't hear the students complaining about the CCTV cameras on the High Street. They don't complain because they know they work. There are far fewer muggings on the High Street than in the back lanes where there are no CCTV cameras. If we don't act now by installing CCTV in the toilets this behaviour will spread to other Year groups.

9 Both Document A and Document D refer to the OFSTED report which claims student behaviour at the school is generally good.

Using **two** credibility criteria, explain why the school inspectors from OFSTED could be judged to be a credible source of evidence.

(a) Criterion 1: ..... [1]

(b) Explanation: .....

..... [1]

(c) Criterion 2: ..... [1]

(d) Explanation: .....

..... [1]

10 Using **one** credibility criterion, explain why the parent in Document C could be judged to be **not** a credible source of evidence about behaviour in the school today.

(a) Criterion: ..... [1]

(b) Explanation: .....

..... [1]

11 In Document B the Student Council claims that it is “not fair” to place CCTV cameras in the student toilets but not in the staff toilets.

Here are some different meanings of the word “fair”:

- Fair = giving all people the same treatment
- Fair = giving all people the treatment they deserve
- Fair = giving all people the treatment they need

Circle the definition of the word “fair” which best fits the way the Student Council uses the word.

[1]

12 Give **one example** of your own to illustrate the point that it can be fair to treat different people differently.

.....

..... [2]

- 13 Document E, the views of the teacher close to retirement, makes lots of claims in favour of CCTV and against using students to monitor the toilets.

There are two claims made by the teacher identified below. For each claim develop a counter argument. This should include a conclusion clearly supported by a reason and evidence or examples which are fully explained.

- (a) They don't complain because they know they (CCTV cameras) work.

Counter argument: .....  
.....  
.....  
.....  
..... [4]

- (b) If we don't act now by installing CCTV in the toilets this behaviour will spread to other Year groups.

Counter argument: .....  
.....  
.....  
..... [4]

- 14 The teacher in Document E claims that asking students to supervise the toilets is "like suggesting we ask the criminal population to oversee muggings on the new estate!"

- (a) State the name given to this type of claim.

.....  
..... [1]

- (b) Explain **one** strength and **one** weakness of the teacher's claim.

.....  
.....  
..... [2]



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