



Institute  
and Faculty  
of Actuaries

# CP3: Exam Guidance

This guide should be read alongside the CP3 syllabus and the Examination specimen papers and materials.



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# Introduction

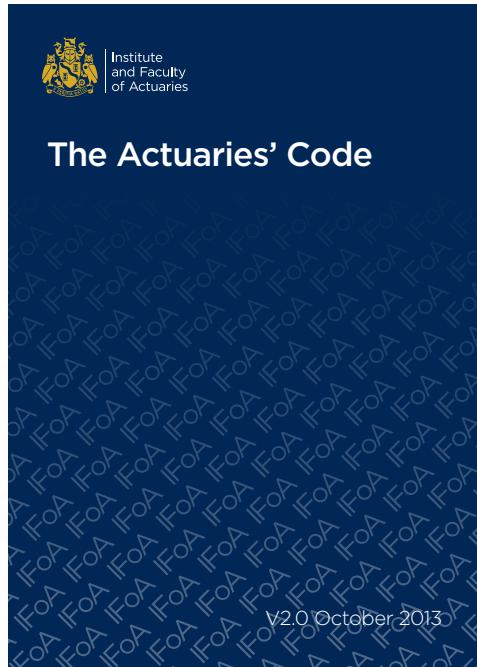
Communication is something we all take for granted because we do it every day, often without even thinking.

This is especially true in our digital age, where a consequence of living increasingly “online” is that the ability to communicate is literally at our fingertips. So we type our emails and text messages quickly. Press ‘send’. And then move on to the next job. But there are times, usually within a professional capacity, when what we say and how we say it must be considered more carefully.

This is especially relevant for the actuarial profession; the complex and specialised nature of an actuary’s work is difficult to translate to someone who is not themselves an actuary, and yet this is often a necessary task. So much in fact, that communication forms part of the Actuaries’ Code:

**5. Communication:** members will  
communicate effectively and meet  
all applicable reporting standards.

CP3 is designed to help you communicate actuarial principles and analysis clearly and effectively to a non-actuarial/technical audience. The purpose of this guide is to help you prepare for the exam by showing you techniques for structuring your communications in a way that helps you to get your message across, and your recipient to understand.



For the Actuaries' Code in full, visit the  
IFoA website: <https://www.actuaries.org.uk/upholding-standards/standards-and-guidance/actuaries-code>



# 1. Planning - use an effective structure (2)

We are all busy. When we get something to read at work we need to be able to quickly extract the information we want, in a way that we can easily understand and use.

This is especially true of documents read on a screen, as our material usually is now. Countless studies have shown that it is harder to read words on a screen than on a page; and it is harder still when that screen is a mobile device.

If we plan what we write before we start we can make it easier for our readers to comprehend us, because we are more likely to:

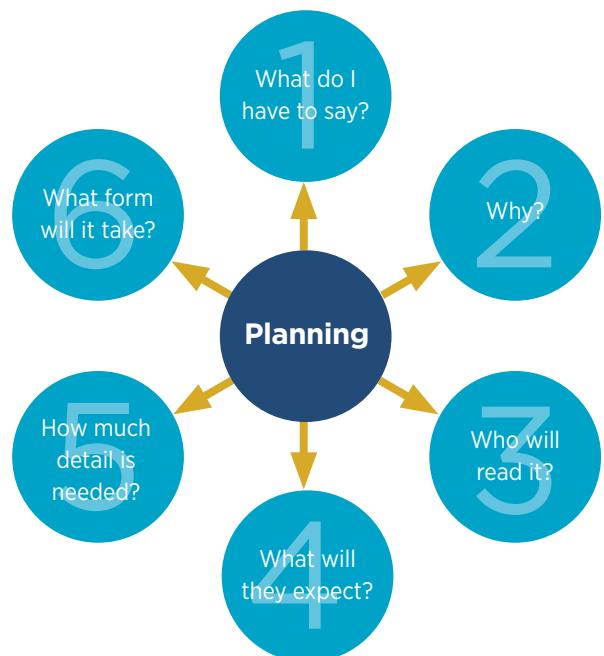
- state the main points clearly; and
- avoid including unnecessary information.

A plan does not have to be a formal document of its own, nor does it have to take a lot of time. You can think of it as a series of questions you ask yourself before you start to write a communication.

Next time you need to write to someone, no matter how short or straightforward, take a few moments to ask yourself the questions in the diagram opposite. Does it change how you approach the communication you are writing?

Of course, it might be that the answers to these questions present themselves almost immediately to you, especially if your planned communication is to be a brief email or memo.

For longer communications, such as a report, these questions may prompt you to consider further factors, such as the need for graphs or charts. Whatever you are writing, taking a few minutes to plan will focus the mind and ensure that what you deliver is clear and concise.



Question 6 of our Planning questions, "What form will it take?", refers to the structure of a piece of writing. It's a good idea to consider this last because the structure you choose will be informed by your answers to the five previous questions. A good structure is essential but there isn't one that is better than another; different structures suit different circumstances. There follows a list of possible options available to you, depending on the type of document you are producing; but it is not exhaustive..

Type of structure	Key features	Uses
<b>Top-heavy triangle</b>	Important points set out early, moving down to the most minor, then a conclusion.	Any communications, including memos, emails and reports. Aids clarity.
<b>SOAP</b> Situation, Objective, Appraisal, Proposal	Summarises the current position; moves to future objectives; advantages/disadvantages; ends with a (revised) plan.	Short reports and emails. Useful for summarising a situation and how it might be improved.
Full report	Starts with the details, links key points together in a logical way, before drawing conclusions.	Lengthier communications requiring explanation of complex ideas.

Dear Mrs Freshman, Thank you for asking me to aid your understanding of how legislation change may impact both our business and customers.

Post 01.01.18: Commercial vehicle and extra optional cover prices will not change.

We offer cover to private individuals or businesses. For private vehicle insurance there are two levels of cover... For both these policies, the premium we charge depends on, amongst other things: gender, age and address.

Business mix and price: Premium income for vehicle insurance is expected to be \$8.35m. Of this, around 48% is commercial vehicle cover....

We will be continuing to monitor our business results and provide updates each quarter.

Yours  
sincerely....

Using the example given in the Specimen Examination Paper, in the case of the Top-heavy triangle structure, you might immediately discuss what will happen post-01.01.18, then go on to discuss 'Our current products and strategy' and how the new legislation will change this.

If we were to use the SOAP structure, the email might instead read like this:

---

Dear Mrs Freshman....

**Impact Of Gender Neutral Pricing**

---

**Situation** Thank you for asking me to aid your understanding of how legislation change may impact both our business and customers.

**Objective** I will give you some background to the change, assist you with a description of our business and approach to setting prices. Finally, I discuss what happens post 01.01.18.

**Appraisal** As you have read, a new law has been passed. It is effective from 01.01.18. All motor insurers, including Speedy CoverAll, will no longer be able to charge different premiums based on gender. Post 01.01.18 - Commercial vehicle and extra optional cover prices will not change. As we will no longer be able to charge different premiums for men and women, we will be adopting prices that are a blend of those for men and women based on the expected male-female split.

**Proposal** I have investigated what happened to our results if all customers select third party cover and even in this extreme situation we can still achieve our target profit. We will be continuing to monitor our business results and provide updates each quarter.

---

Of course, both examples are simplified versions, but hopefully they give you an idea of how the structures work and how you might organise the material you need to cover in any given written communication.

As we have already noted, there may be several factors that influence your choice of structure. Not least the intended audience. For example, a busy finance director may prefer communications prepared using the "top-heavy triangle" where they can identify the main issues quickly. A pension scheme member who has asked for a detailed explanation of benefits

may prefer to read the detail first, so the "full report" approach may be more appropriate.

Now that we have our plan, and an idea of how we might structure the communication, we must start to organise our writing.

## 2. Organising - Identify relevant information and appropriate content (1)

The thought of starting any piece of written communication can be daunting. Hopefully the plan you've made will give the task its overall shape, but now you need to think about how to fill it all in with words.

Think of it like constructing a scaffolding structure. In making the plan, you have built the framework, the bars and poles that hold everything together. The next step is to put in the wooden slats and ladders to make it possible to walk along each section and to link it all together. This makes the scaffolding a useful construction, rather than just an ugly collection of metal work.

### Making a solid start...

The opening sentence should be clear, concise, and to the point. This is true of any written communication, but particularly so in a business context. If you are writing an email you can fill in the subject field to give your communication a clear heading. Specify what the email is about and mark it urgent if you need a quick response. It is the first thing the recipient shall read, so be clear about your own expectations from the outset.

### ...and a clear finish.

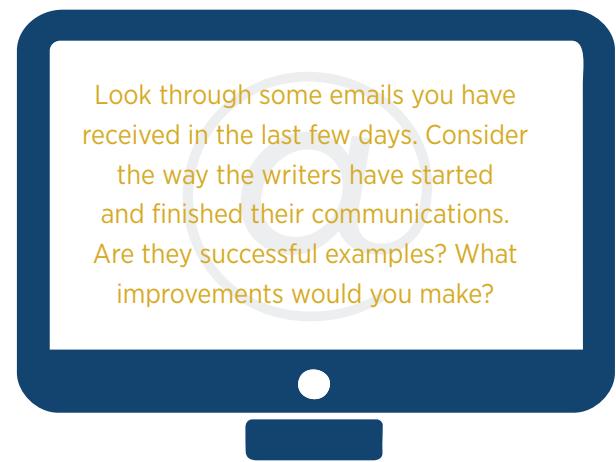
The same applies to closing your communication. Keep the finish simple. In an email requiring a response, you might repeat an instruction or action point:

*"I look forward to receiving the signed attached forms by the end of the day."*

Sound sincere by using modern English, especially in an email, which is a less formal way of communicating than a letter, for example.

*"I hope this is helpful. If you need more information, please contact me."*

In all communications, generally at the end, it is appropriate to offer further help. In an email or letter such an offer should be made along with your contact details.



## Know your audience.

If we were always communicating with people exactly like ourselves, producing memos, emails, and reports would be easy (and probably unnecessary!). The difficulty often comes when we need to explain something that we do every day to someone else who does not. The temptation is to slip into jargon, or to gloss over a complex point without providing our reader with all the information they need to fully understand. And no wonder, because to do so is lengthy and often boring. However, taking the time to think about how much help your reader might need will save you time in the future, and will mark you out as a clear and considerate communicator.

If writing in response to a request for information, search their message to you for tips. For example, they may ask for a “summary” or an “overview”. In which case, in-depth analysis of a topic will not be helpful. You may know for instance, that the recipient has no insurance background, so detailed analysis or the use of jargon will simply confuse them.

Complex language isn't just about terms you find within your own industry. It is possible to make simple sentences very difficult, without even realising. For example, making plans for a meeting can be simple:

*“Please let me know when you are free to meet.”*

Or not:

*“I would very much like to know when you are available for a meeting. Please get in touch at your earliest convenience so that we might make a mutually beneficial arrangement.”*

It is easy to laugh at the second sentence, but it's also an easy mistake to make, especially if you are confident with language. Remember, not everyone is.

Sometimes jargon is unavoidable. Actuarial science uses specific terminology that can't always be separated from an explanation. If this is the case, give your audience a helping hand by giving a brief definition in brackets. They will thank you for it.

## Filter the information

In planning your communication, you will have identified the key issues that need to be addressed.

In the business world, the number of issues to be addressed is often related to the form of communication. For example, a full report may cover a significantly greater number of issues than a brief memo or email. However, in the CP3 exam, you should expect there to be a relatively small number of key issues which need to be addressed – irrespective of the form of communication.

To address these key issues, you must identify the relevant points from the information provided. In the CP3 exam, these points will be contained within the scenario presented and question asked. The success of your communication will partly rely upon your ability to omit any unnecessary information provided in the scenario that may not be relevant to the communication objectives in the question. Is the data reliable and worth referencing? Or is it outdated and irrelevant? Is a full explanation needed, or will a summary be enough?

Use the clues provided. If your audience is concerned about how a policy change might affect men differently from women, they do not also need data comparing different age groups. If they are worried about complaints from customers, they won't want to discuss profit margins in the same email. Of course, all these topics can be related in some way, but shouldn't be unless you have been asked to do so.

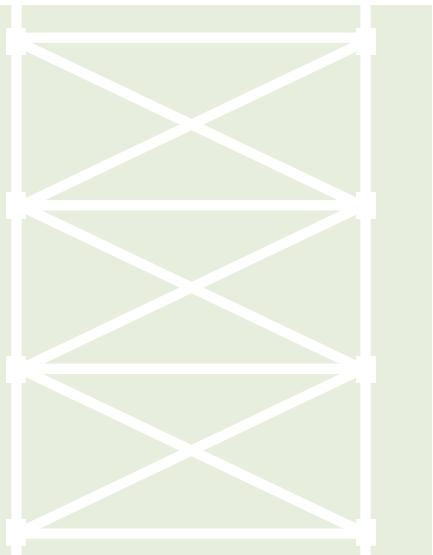
## Consider the following three sentences.

What changes would you make so they are easier to understand?

1. It is imperative we discuss how we might optimise profits.
2. I further accentuate my earlier point regarding remittance and request the appropriate documents are despatched forthwith.
3. We shall endeavour to collaborate sufficiently in order to expedite proceedings.

There are no right or wrong answers here. Think about how you might simplify these sentences until you are comfortable with the results. You might have to look some of these words up in a dictionary to be clear of their meaning,

**How did that make you feel?**



# 3. Presentation - incorporate effective communication tools (5)

Breaking up your writing into paragraphs will probably be something that you already do without thinking. You'll do this to keep the points you want to make separate from each other, and clearer for the reader to understand. The white space between the paragraphs also gives your reader's eyes a rest from the task of reading.

But there are other ways to present our writing which make it both easier to understand and more interesting to look at.

## Headings

In most documents, headings will help the reader. They serve two main purposes.

- To show the structure of the document at a glance.
- To act as signposts directing the reader through the information and analysis being presented.

We have already mentioned the use of the subject field in an email, but headings can help you organise the content of the email itself, and will help your reader in scanning the text for the information that is of interest to them. Headings will be especially useful in lengthy reports which might be sent to several different people with different reasons for reading.

## Bullet points

The use of bullet points makes explaining and understanding complex information easier – provided you write them in a logical and consistent way.

If we take the Wikipedia description of actuarial science:

## Actuarial science

From Wikipedia, the free encyclopedia

**Actuarial science** is the discipline that applies mathematical and statistical methods to assess risk in insurance, finance and other industries and professions. Actuaries are professionals who are qualified in this field through intense education and experience. In many countries, actuaries must demonstrate their competence by passing a series of thorough professional examinations.

The bullet point summary might look like this:

### Actuarial science is a discipline that uses mathematics and statistics.

- Actuaries assess risk in insurance, finance and other industries and professions.
- Actuaries are professionals who are qualified in this field through intense education and experience.
- Actuaries must demonstrate their competence by passing a series of thorough professional examinations.

It might help further to number the items if you want to rank them chronologically, or in order of importance. This is especially true when summarising plans, for example:

### The agenda for the conference is as follows:

1. Meet and greet delegates.
2. Light refreshments.
3. Review of last quarter profits.
4. Lunch.
5. Review of plans for next quarter.
6. Light refreshments.
7. Question and answer session.
8. Delegates exit.

If you are consistent in your approach, bullet points can only help you to organise your writing and provide clarity for your readers.

## Visual aids

The production of accurate, detailed numerical answers is a familiar element of actuarial work. However, the work is not always appreciated by the recipients if these results are not communicated clearly and effectively.

The use of tables, graphs, charts and diagrams can all help your reader to better understand your explanations; but you will still need to be thoughtful and selective about the data you choose to present. Numeric examples may back up explanations, but are not a substitute for clear explanations.

When communicating numeric data you should use the lowest level of accuracy (e.g. significant figures) required to achieve your objectives, without being misleading. Short, simple, approximate numerical examples are generally preferred to lengthy, complex, accurate calculations.

Tables are also useful for communicating a large amount of information, or comparing ideas, in a way that is quick and easy to read and understand, and to pass around to other interested parties.

For example, an insurance company wants to tell a customer how much her policies are worth:

You now hold three equity plans. The 2008 plan is mature and is valued at £862.08. The 2009 plan will not become mature until 1 January 2018 and is currently valued at £950.43. The 2011 plan will mature on 1 January 2020 and is currently valued at £738.45.

These sentences are short and the information is simple, but it is still worthwhile using a table to make this information even easier to understand at a glance.

Year of plan	Current value	Maturity date
2008	£862.08	Mature
2009	£950.43	1 January 2018
2011	£738.45	1 January 2020

Source: *The Oxford Guide to Plain English* (2013), Martin Cutts

You could also highlight the progress of the plans in a diagram



### Consider being a chart topper

- | Exercise tasks | 0.5  | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 |
|----------------|--|-----|-----|-----|-----|-----|
| 1              | Find an example of numeric data that has been communicated in a graph or chart.          |     |     |     |     |     |
| 2              | Write a short piece (no more than 200 words) explaining what the graph is communicating. |     |     |     |     |     |
| 3              | Now find an explanation that uses a series of related numbers.                           |     |     |     |     |     |
| 4              | Can they be converted to a graph or chart to help them be understood?                    |     |     |     |     |     |
| 5              | You can choose the context or likely audience, if that helps.                            |     |     |     |     |     |

## Consider your reader. What is important to them?

Use the following template to draft your own plan for a typical document you might write using the ideas we have discussed in the last three sections. To help you see how this might work, we have used the example given in the Specimen Examination Paper for this exam.

You might find it helpful to work with a colleague and share your ideas.

Template	Example
<b>Start</b>	Dear Mrs Freshman...
<b>Scene Setting</b>  I am writing to inform you... / Thank you for your email...	<b>Impact Of Gender Neutral Pricing</b>  Thank you for asking me to aid your understanding of how legislation change may impact both our business and customers. I will give you some background to the change, assist you with a description of our business and approach to setting prices. Finally, I discuss what may happen post 01.01.18.
<b>The Detail</b>  Depending on structure, but relevant for recipient, no jargon, any illustrative content.  Use headings that follow on from the 'scene setting' you provided in the first paragraph.	Background: New legislation  Our Current Products and Strategy  Business Mix and Price  Post 01.01.18
<b>Summary</b>  Draw all the main points together to directly answer the question which prompted the communication.	Men will see a fall in cost of motor insurance whilst women face an increase. Whilst this is undesirable, all our competitors will be doing a similar exercise and face the same issue. We will not, however, be making changes to commercial vehicle insurance which is the largest part of our business.
<b>Sign-Off/Politeness</b>  I hope you find this useful.../ Kind regards...	I trust that this information will be useful to you. If you have any other questions, please do not hesitate to contact me again.

# 4. Explaining - include appropriate explanation (4) + use appropriate language (3)

It is likely that part of the CP3 assessment, as in your every-day work life, will require a written explanation of a situation.

The objectives of the communication may be indicated either:

- explicitly, e.g. in the form of a series of bullet points in the question, and/or
- implicitly, e.g. in a request or /instruction (such as a letter/ email/memo) from which the objectives can be inferred.

Deal with these objectives directly. You might take a few lines to list the objectives as you see them, and in what order you will respond to them. Prioritise the questions you are asked and draw attention to the answers you provide. This will show that you understand your reader's main concerns.

In your planning, you will have identified the key issues to be addressed, and you will have decided how to pitch your response depending on the actuarial background of your reader (or lack of). The tricky part comes now: in constructing sentences that are clear and to the point, without coming across as blunt or rude. You need to "write tight".

In an ideal world, we would have time to draft and revise our written communications until we are completely sure of their effectiveness. However, this is the world of business and rarely is such a luxury available. Instead there are two checks you can apply to your work to quickly ensure its quality and impact.

## 1. Remove useless words.

## 2. Be active, not passive.

Words are useless if they are repeated.

-  The booking request has been received to request a booking for 8pm on Thursday 12th May.
-  **We have received your booking for Thursday 12th May at 8pm** is a clearer alternative.

Or if they are used to repeat an idea.

-  A new bank account is in the process of being set up for you.
-  **A new bank account is being set up for you** tells the reader exactly what they need to know.

And there are certain phrases that unnecessarily fill space, and in some instances, sound too formal.

-  I attach herewith remittance for tasks undertaken as agreed in our earlier correspondence and completed on 23/03/2017.
-  **Please find attached my invoice for work completed 23/03/2017** gets straight to the point.

Using a passive voice also makes our writing sound more formal than necessary. It is something we think we need to do in professional life, but if you write as you talk your readers will find it easier to understand what you are explaining. This is especially important when the subject matter is complex.

An active sentence would read like this:

-  **Tom is writing a report.**  
You can see that Tom, the agent, is placed before the verb.

A passive sentence would say:

-  **The report is being written by Tom.**  
While in this example, the verb, 'being written', is placed before the agent.

The first sentence says exactly what is happening, while the second sentence is awkward and vague. It is subtly more difficult for the reader to understand because your short-term memory must remember there is a report before finding out what is happening to it (it's being written by Tom!). In one sentence, this isn't a problem. A document littered with sentences like this, however, is hard work for your reader.

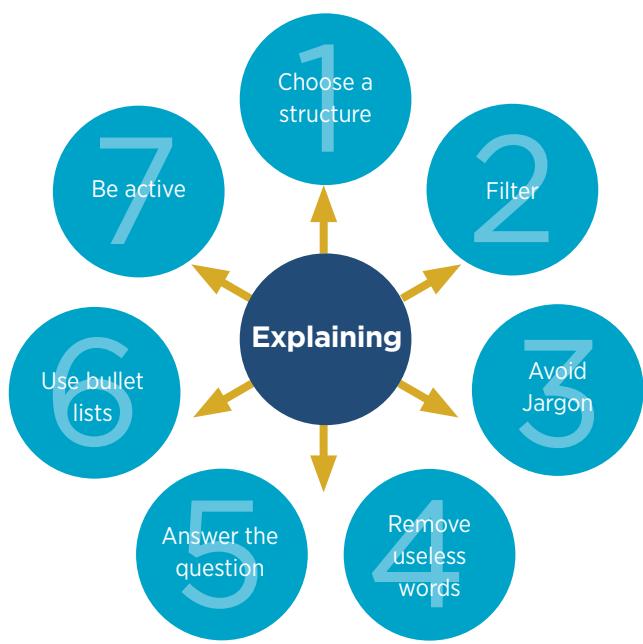
### Consider the following paragraph.

How would you make this explanation clearer?

*I am sincerely sorry to hear your promotion code has not worked when you have attempted to apply it at checkout, as a result of this I would request that you reply to this e-mail by forwarding the original promotion by sending an image of the promotion code to us. If you could also please go ahead and place the order, then please also include in your reply your new order number so I can apply the promotion to the order and process your refund once we have received the relevant information from you regarding the promotion code.*

*I am sorry for any inconvenience this may have caused you. If there is anything further I can help with, please do not hesitate to contact me by replying to this email address.*

To explain well we need to remember many of the points we have already covered.



### Plain language

The CP3 exam will assess your ability to communicate effectively in writing to a non-actuarial/non-technical audience. We can summarise this as the need to be conscious of our use of language, and to use it plainly.

Plain language is best defined by the International Plain Language Federation:

*"A communication is in plain language if its wording, structure and design are so clear that the intended audience can easily find what they need, understand what they find, and use that information."*

[www.plainlanguagenetwork.org](http://www.plainlanguagenetwork.org)

Think carefully about your choice of words, organise and structure your written communications so they have a layout and design easy to navigate. And never use a long word where a short one will do!

# Practice exam question

## Consider the following question

You are a qualified actuary managing the actuarial department of an insurance company. You have received the following email from the marketing director:

Bob,

I'm hoping you can throw some light on a problem I'm working on.

We currently issue mailings to 10,000 customers each month. The mailings are sent out by another company on our behalf, and include an information booklet which many customers find helpful. On average we get 6 customers each month who contact us to complain that the booklet was not included.

Last month we changed the mailing company, and the number of complaints increased by 50% to 9. I was concerned and complained to the new mailing company. They tell me that the number of complaints varies every month and so this result isn't significant. Surely a 50% increase must mean there's an underlying problem?

On a related matter, we had 20% fewer letters returned by the post office marked "gone away" from the last batch: down from our average of 200 to 160.

Regards

John

You shared the email with one of your eager actuarial students. You did not provide any guidance to them but they have now supplied you with the following calculations, using a normal approximation to a binomial distribution:

Example 4:	Vouchers missing	Gone-Away
Example 4:	Example 4:	Example 4:
Mean	6	200
P	0.0006	0.02
Variance = $Np(1 - p)$	5.9964	196
Standard Deviation = $\sqrt{\text{Variance}}$	2.4488	14
95% significance factor on normal distribution	1.645	1.645
Factor $\times$ standard deviation	4.03 (= 2.4488 $\times$ 1.645)	23.03 (= 14 $\times$ 1.645)
95% significance level	$6 + 4.03 = 10.03$	$200 - 23.03 = 176.97$
91.7% (1 in 12) significance factor on normal distribution	1.383	1.383
Factor $\times$ standard deviation	3.39	19.36
91.7% significance level	$6 + 3.39 = 9.39$	$200 - 19.36 = 180.64$
99.8% significance factor on normal distribution	2.88	2.88
Factor $\times$ standard deviation	7.05	40.32
99.8% significance level	$6 + 7.05 = 13.05$	$200 - 40.32 = 159.68$

999 When re-reading the email from John, you have also noted that if the company had failed to send out 20% of the mailings, you would expect this to reduce the numbers returned as “gone away” to 160 and to reduce the average number of complaints to just over five.

Draft an email back to the marketing director. You should address the following issues:

1. The increase in the number of complaints.
2. The fall in the number of mailings returned marked “gone away”.
3. The relative significance attached to differing sample sizes.
4. The effect of the mailing company not sending out all the letters.

#### **Notes:**

1. In the general economy there has been no change in the level of house-moves.
2. You are not expected to do any further calculations.

#### **End of Question**

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There are four key issues to be identified here – as explicitly indicated in the question.

The first issue is that the marketing director is concerned about the 50% increase in the number of complaints and wants to know if there is a problem, despite assurances that this is “not significant”. To respond fully to the email, you would need to identify the points necessary to address the four issues. Below we will just consider those points necessary to address the first issue.

The background information provided shows that the number of complaints experienced is within a 91.7% confidence interval and is therefore not “significant”. Therefore, the points that could be made to address this first issue might be:

- a point covering the background, i.e. that the number of complaints is 9 compared to the average of 6;
- some information on the chances of this happening, e.g. it's likely to happen 1 in 12 times;
- assertion that the 50% increase is therefore not “significant”, and;
- a summary point explaining that it might be worth keeping an eye on next month's figures because twice in a row is much less likely.

It would be distracting and/or potentially confusing to refer to the underlying assumptions (e.g. the choice of statistical distribution), or information based on other confidence intervals.

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# Recommended resources

Oxford Guide to Plain English (2013), Martin Cutts

Reading from paper versus screens: a critical review of the empirical literature (1992), Andrew Dillon; <https://www.ischool.utexas.edu/~adillon/Journals/Reading.htm>

Reading Content on Mobile Devices, Kate Meyer on December 11, 2016; <https://www.nngroup.com/articles/mobile-content/>

Readability <http://www.see-a-voice.org/marketing-ad/effective-communication/readability/>

Bullet points <http://www.better-writing-tips.com/bullet-points.html>

Plain language [www.plainlanguagenetwork.org](http://www.plainlanguagenetwork.org)



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