



## Unit 0 Style test

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*Draft D1 prepared for the module team by Robert Hasson.*

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# Introduction

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo. **Author comment on text.**

$$E = mc^2$$

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

## 1    Headings

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

### 1.1    OnePointOne

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

#### 1.1.1    OnePointOnePointOne

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

#### Titledparagraph style – same page on VLE

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## 2 Margin notes

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Hello

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consetetuer massa. Curabitur quis urna. Pellentesque a justo.

Hello

$$E = mc^2$$

Hello

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consetetuer massa. Curabitur quis urna. Pellentesque a justo.

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consetetuer massa. Curabitur quis urna. Pellentesque a justo.

Hello

$$y = x$$

$$= 1$$

$$= 2$$

$$= 3$$

alongside the 1.

Note the large space above the aligned equations, when they immediately follow a box.

### Title

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consetetuer massa. Curabitur quis urna. Pellentesque a justo.

Hello

### 3 Boxes

The generic box styles exist, but authors should use context names (such as ‘highlight’, ‘history’ or ‘aside’ rather than using the generic box styles directly. All boxes break between pages automatically.

#### Box title style1box

##### Subheading in box

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Ut purus elit, vestibulum ut, placerat ac, adipiscing vitae, felis. Curabitur dictum gravida mauris. Nam arcu libero, nonummy eget, consectetur id, vulputate a, magna. Donec vehicula augue eu neque. Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

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#### Box title style2box

Nam dui ligula, fringilla a, euismod sodales, sollicitudin vel, wisi. Morbi auctor lorem non justo. Nam lacus libero, pretium at, lobortis vitae, ultricies et, tellus. Donec aliquet, tortor sed accumsan bibendum, erat ligula aliquet magna, vitae ornare odio metus a mi. Morbi ac orci et nisl hendrerit mollis. Suspendisse ut massa. Cras nec ante. Pellentesque a nulla. Cum sociis natoque penatibus et magnis dis parturient montes, nascetur ridiculus mus. Aliquam tincidunt urna. Nulla ullamcorper vestibulum turpis. Pellentesque cursus luctus mauris.

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

#### Box title style3box

Nulla malesuada porttitor diam. Donec felis erat, congue non, volutpat at, tincidunt tristique, libero. Vivamus viverra fermentum felis. Donec nonummy pellentesque ante. Phasellus adipiscing semper

elit. Proin fermentum massa ac quam. Sed diam turpis, molestie vitae, placerat a, molestie nec, leo. Maecenas lacinia. Nam ipsum ligula, eleifend at, accumsan nec, suscipit a, ipsum. Morbi blandit ligula feugiat magna. Nunc eleifend consequat lorem. Sed lacinia nulla vitae enim. Pellentesque tincidunt purus vel magna. Integer non enim. Praesent euismod nunc eu purus. Donec bibendum quam in tellus. Nullam cursus pulvinar lectus. Donec et mi. Nam vulputate metus eu enim. Vestibulum pellentesque felis eu massa.

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

#### Box title style4box

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

The fourth box style changes in the online templates. The online version of the fourth box style is also implemented, just in case documents want to mimic the look of online documents.

#### Box title online style4box

Quisque ullamcorper placerat ipsum. Cras nibh. Morbi vel justo vitae lacus tincidunt ultrices. Lorem ipsum dolor sit amet, consectetur adipiscing elit. In hac habitasse platea dictumst. Integer tempus convallis augue. Etiam facilisis. Nunc elementum fermentum wisi. Aenean placerat. Ut imperdiet, enim sed gravida sollicitudin, felis odio placerat quam, ac pulvinar elit purus eget enim. Nunc vitae tortor. Proin tempus nibh sit amet nisl. Vivamus quis tortor vitae risus porta vehicula.

Titled box containing just a list.

#### Solution

- (a) part 1.
- (b) part 2.
- (c) part 3.

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac

metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

Figure within a Box

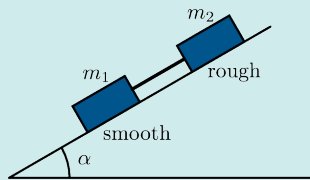


Figure 1    Test caption

## 4    Lists

Default list is numbered (a), (b), (c), ...

- (a) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.
- (b) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

The preferred way to change the labels is to use the environment optional parameter as follows.

1. Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.
2. Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

The most frequently used variant is to have numbered items (as above), so a style is set up for this, namely `plainenumerate`. The advantage of using `plainenumerate` rather than using the optional argument is to avoid confusion between `enumerate` used for subexercises etc. and a real enumerated list appearing in an exercise.

1. Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah.
2. Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah.

- [illegible]

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consecetuer massa. Curabitur quis urna. Pellentesque a justo.

- (a) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.
- (b) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.
- (i) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.
- (ii) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

- (a) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.
- (b) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.
- (i) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris

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- (ii) Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

**First item** Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

**Second item** Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

**Nested first item** Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

**Nested second item** Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

- Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.
- Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac



metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

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- Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

Now try quote environment

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

adapted from Cicero, © unknown

Now we try an inline list

(a) first      (b) second      (c) third

## 5 Equations

Unnumbered equations: use `\[` and `\]` such as

$$E = mc^2$$

Note that `\\` is not allowed within displayed equations. Use `align*` instead, e.g.

first line

second line

For numbered equations use the `equation` (the O<sub>U</sub>TeX command `\donumber` is not defined).

$$\text{equation 1} \tag{1}$$

For aligned equations use `align*`

$$a = b$$

$$= c$$

For numbered aligned equations use `align`

$$a = b \tag{2}$$

$$= c \tag{3}$$

Reference to line one, equation (2), and to line two equation (3).

To number only one line use `\nonumber`

$$\begin{aligned} a &= b \\ &= c \\ &= d \end{aligned} \tag{4}$$

Compare spacing with display math

$$y = x^2$$

Matrix with no arguments (as AMSmath standard, defaults to cccccc) and matrix with optional placement arguments.

$$\left( \begin{array}{cc} 1 & -2 \\ -3 & 4 \end{array} \right) \quad \left( \begin{array}{c|c} 1 & -2 \\ -3 & 4 \end{array} \right)$$

## 6 Exercises, Activities and Examples

In sit amet dui eget lacus rutrum accumsan. Phasellus ac metus sed massa varius auctor. Curabitur velit elit, pellentesque eget, molestie nec, congue at, pede. Maecenas quis tellus non lorem vulputate ornare. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Etiam magna arcu, vulputate egestas, aliquet ut, facilisis ut, nisl. Donec vulputate wisi ac dolor. Aliquam feugiat nibh id tellus. Morbi eget massa sit amet purus accumsan dictum. Aenean a lorem. Fusce semper porta sapien.

---

### Exercise 1

This is a question

- (a) First part
- (b) Second part

Testing reference to exercise, namely Exercise 1.

---

### Exercise 2    second exercise in exercises with title

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

---

### Exercise 3    third exercise in exercises with a very very long title

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

That was Exercise 1, which contained equation S1.

2 (5)

Here we tell students about margin icons, such as the one alongside in the margin. The following exercise has some icons in the margin. For drafting these are just some text in a box. With the final option they will be the standard set of icons.

WEB

---

### Exercise 4

CALC

WEB

This is another question

That was Exercise 4.

The following exercise shows the style to use instead of the OUPeX command `\intertext`.

---

### Exercise 5 Intertext style question

This is another question

(a) Part one.

(b) Part two.

Here are further instructions.

(c) Part three.

(d) Part four.

---

The following exercise with inline parts

---

### Exercise 6 inline question

This is another question

(a) Part one.

(b) Part two.

(i) Part one.      (ii) Part two.      (iii) Part three.

(iv) Part four.

(c) Part three.

(d) Part four.

---

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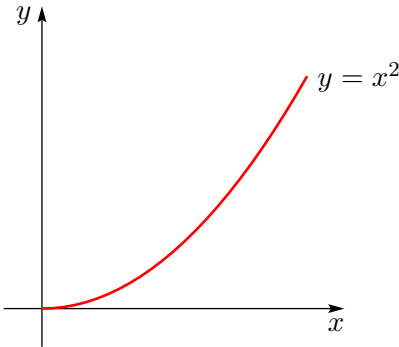
---

### Exercise 7

The use of `enumerate` lists to denote subexercises is not helpful when the question needs to contain a genuine enumerated list. For this exceptional case the `plainenumerate` environment can be used as follows.

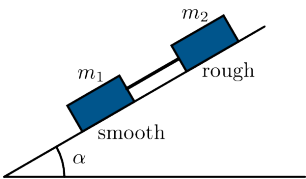
Draft D1 Last L<sup>A</sup>T<sub>E</sub>Xed 21:40 Tuesday 22<sup>nd</sup> May, 2018





© Open University

Figure with caption:

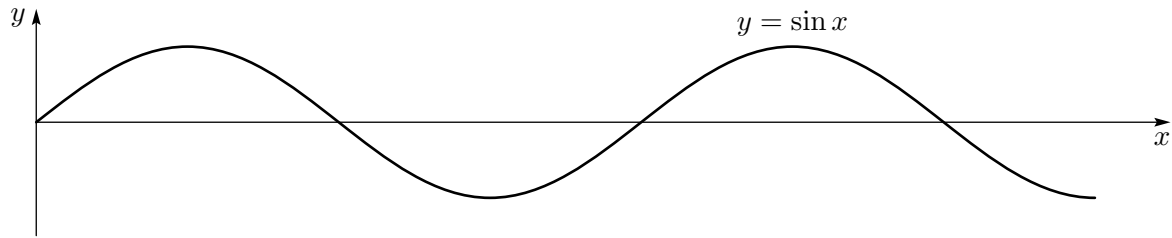


**Figure 2** Figure test using includegraphics. This figure has an exceedingly long caption so that the justification can be checked. Testing Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah.

This is a reference to Figure 2.

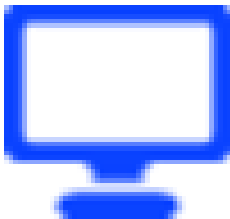
Test for wide figure.

In sit amet dui eget lacus rutrum accumsan. Phasellus ac metus sed massa varius auctor. Curabitur velit elit, pellentesque eget, molestie nec, congue at, pede. Maecenas quis tellus non lorem vulputate ornare. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Etiam magna arcu, vulputate egestas, aliquet ut, facilisis ut, nisl. Donec vulputate wisi ac dolor. Aliquam feugiat nibh id tellus. Morbi eget massa sit amet purus accumsan dictum. Aenean a lorem. Fusce semper porta sapien.



**Figure 3** Widefigure test

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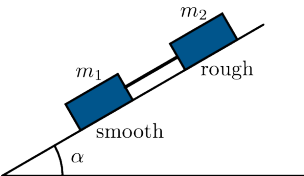
MarginfigDonec sit. Incidunt tempor metus. Aenean egestas cursus nulla. Fusce ac

metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

Exercise 9

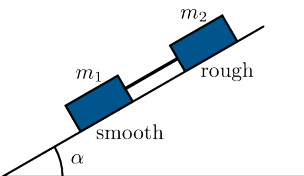
This is another question

Test for unnumbered figure.



Test for figure in list.

- (a) One
- (b) Two with figure.

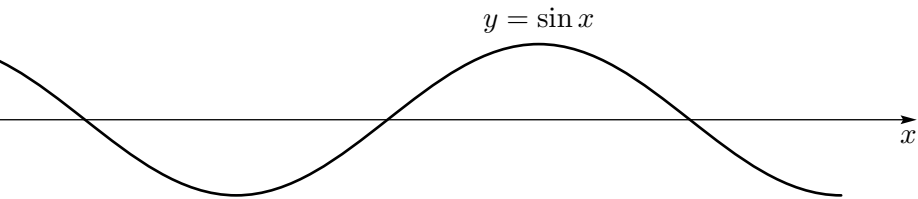


- (c) Three

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo. Test for marginfigure optional placement. Test for wide figure.



Figure 4 Figure test



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Figure 5 Figure test using includegraphics  
includegraphics  
includegraphics  
includegraphics  
This marginnote is placed in exactly the same place as the marginfigure — notice how the first line exactly overlaps the  
end of the caption.

## 8 Theorems and proofs

## Theorem 1

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

**Proof** Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

## Theorem 2

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

**Proof heading** Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

$$E = mc^2$$

For a named theorem use `theorem*` to suppress the number.

## Theorem Fundamental theorem of algebra

Every polynomial of degree greater than one has a root in  $\mathbb{C}$ .

Long titles.

**Theorem 3** Very very very very very very very very very  
very very very very very very very very very very  
very very very very very very very very very very  
very very very very very very very very very long  
title

Every polynomial of degree greater than one has a root in  $\mathbb{C}$ .



## 9 Nesting tests

### Activity 4

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

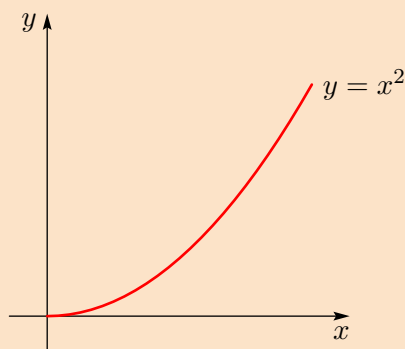
### Example 2

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

### Solution

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**Figure 6** Figure test using Tikz. Note that commands in figure captions need to be robust like  $\square$  and  $\mathbb{R}^2$ .

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.



The following shows the optional title argument for a proof and also shows how to change the numbering of the steps if desired.

### Proof optional title

Do the following steps.

- (a) foo
- (b) bar



A second voice is available to add comments to show what you are thinking.  Example thought bubble .

## 10 Issues and workarounds

The following is a list of known issues that have work-arounds.

- To have aligned equations in a list (such as a part of an exercise) used the `aligned` environment with the `[t]` optional argument:
  - (i) 
$$\begin{aligned} \phi : (\mathbb{Z}, +) &\longrightarrow (\mathbb{Z}_{12}, +_{12}) \\ n &\longmapsto n \pmod{12} \end{aligned}$$
  - (ii) 
$$\begin{aligned} \phi : (\mathbb{Z}, +) &\longrightarrow (\mathbb{R}^*, \times) \\ n &\longmapsto 2^n \end{aligned}$$
- The moving solutions (namely the exercise and activity solutions) use the `verbatim` package to do the moving, which means that `\begin{solution}` and `\end{solution}` must appear on a line on their own. This is not such a great problem as the error message is very specific if an author breaks this rule.
- Any commands in a figure caption need to be robust. This is because they are written to a separate file to allow the possibility of producing a list of figures.
- If an overfull hbox occurs within a box then the box will expand to fit the contents. If a pagebreak occurs in the box then the box on the first

page expands to fit even if the overfull hbox does not occur on this page. After the page break the box returns to its natural length, which can mean that content spills out to the right if there is an overfull hbox on the page. The solution is to fix the overfull hbox's.

5. If a `marginfigure` environment appears in the middle of a sentence then it will absorb the space following so that the words either side of the `marginfigure` will coalesce. Place margin figures at the end of a paragraph that first refers to the figure. In this way the figure will be in the correct place when translated to other formats (e.g. ePub). Use the optional argument to move a margin figure up or down (if needed to avoid other marginalia).
6. A `marginnote` (or `marginfigure`) in an AMS math environment (e.g. `align` or `align*`) will extend the line to the width of the `marginnote`. This causes an a box to extend in size to surround the margin note. The work-around is to move the `marginnote` to outside the AMS math environment.
7. The line spacing of a `marginnote` is inherited from the line that is the text anchor, which can cause the `marginnote` to have odd line spacing.
8. A numbered margin figure within and unnumbered AMS math environment triggers a spurious ‘label lost’ warning message. Do not put margin figures inside equations, place them in the logical place (i.e. after the paragraph that first refers to them) and use the optional argument to move the figures as desired.
9. Text coloured using `\thinks` does not continue across a page break when embedded within a breakable box. The work-around is to add `\color{colourThree}` into the source file at the point at which colour is lost (i.e. just after the page break). If the page breaks change and it no longer occurs within the `thinks` text then the extra change colour command will be harmless.
10. The end of proof symbol disappears if the proof ends with a margin figure or a margin note. To stop this happening add something invisible after the margin figure, such as `\phantom{a}`.
11. Extra whitespace can be added between a margin figure and its caption if the figure is oversized. This only happens when the caption command follows the `includegraphics` command — reversing the commands removes the extra whitespace from the output. A better solution is to resize the graphic so that it fits within the margin. (Rather paradoxically the oversized graphic will cause latex to issue an ‘undersized hbox badness 10000’ error message as the extra blank line produced only contains the caption command that does not produce any output, which is what generates the warning message.)
12. If a displayed equation has a large depth then the equation can protrude from the bottom of a box if a page break occurs immediately following the equation. For example, the displayed equation `\[ \begin{aligned} 1 \\ 2 \\ 3 \\ 4 \\ 5 \\ 6 \\ 7 \end{aligned} \]` has a large depth. To fix this change the equation so that it does not have a large depth, so for example the above equation can be changed to have large height and zero depth by using the `[b]` optional argument of `{aligned}`.

# Solutions to exercises

## Solution to Exercise 1

This is the answer.

(a) First part answer

(b) Second part answer  
equation in solution (S1)

Testing verbatim in moving solution `hello`.

Testing reference to equation in solution, namely equation S1.

## Solution to Exercise 2

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

## Solution to Exercise 3

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

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Pellentesque habitant morbi tristique senectus et netus et malesuada fames ac turpis egestas. Mauris ut leo. Cras viverra metus rhoncus sem. Nulla et lectus vestibulum urna fringilla ultrices. Phasellus eu tellus sit amet tortor gravida placerat. Integer sapien est, iaculis in, pretium quis, viverra ac, nunc. Praesent eget sem vel leo ultrices bibendum. Aenean faucibus. Morbi dolor nulla, malesuada eu, pulvinar at, mollis ac, nulla. Curabitur auctor semper nulla. Donec varius orci eget risus. Duis nibh mi, congue eu, accumsan eleifend, sagittis quis, diam. Duis eget orci sit amet orci dignissim rutrum.

## Solution to Exercise 4

This is another answer.

## Solution to Exercise 5

- (a) Solution one.
- (b) Solution two.
- (c) Solution three.
- (d) Solution four.

## Solution to Exercise 6

- (a) Solution one.
- (b) Solution two.
- (i) Part one.
- (ii) Part two.
- (iii) Part three.
- (iv) Part four.
- (c) Solution three.
- (d) Solution four.

## Solution to Exercise 7

Sometimes a solution needs to include an enumerated list, which is distinct from the enumerated list used to denote subquestions.

1. Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah.
2. Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah.
3. Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah Blah.

## Solution to Exercise 9

Here is a numbered figure:



**Figure S1**    Figure test

This is another answer.

# Solutions to activities

## Solution to Activity 1

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

## Solution to Activity 2

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

## Solution to Activity 3

Donec tincidunt tempor metus. Aenean egestas cursus nulla. Fusce ac metus at enim viverra lacinia. Vestibulum in magna non eros varius suscipit. Nullam cursus nibh. Mauris neque. In nunc quam, convallis vitae, posuere in, consequat sed, wisi. Phasellus bibendum consectetur massa. Curabitur quis urna. Pellentesque a justo.

## Solution to Activity 4

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## Index

boxes, 4

online box, *see* boxes