

# 1 Including graphics

This document is a sandbox for Exercise 4.

## 1.1 1) A centered image (basic)

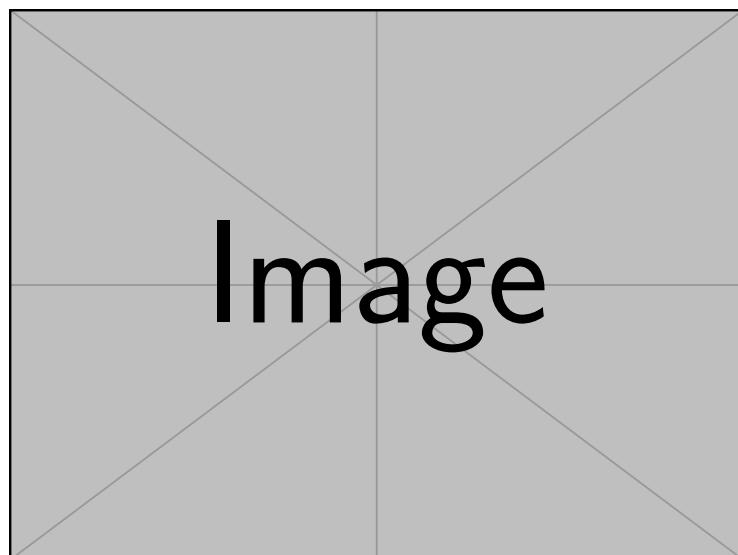
Below is a centered image. Replace `example-image` with your own file (e.g. `myplot.pdf` or `photo.jpg`) placed in `figs/`.



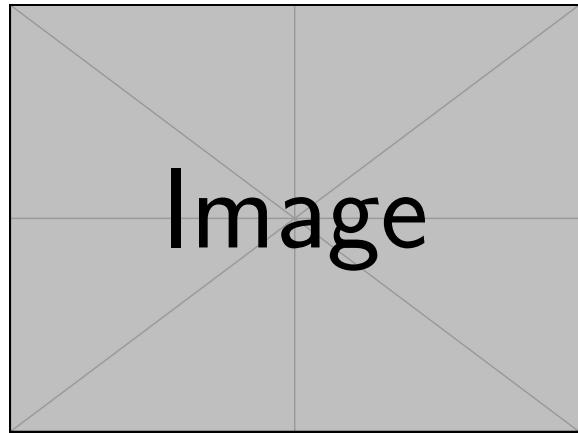
# 2 Altering the appearance of images

## 2.1 2) Height vs width

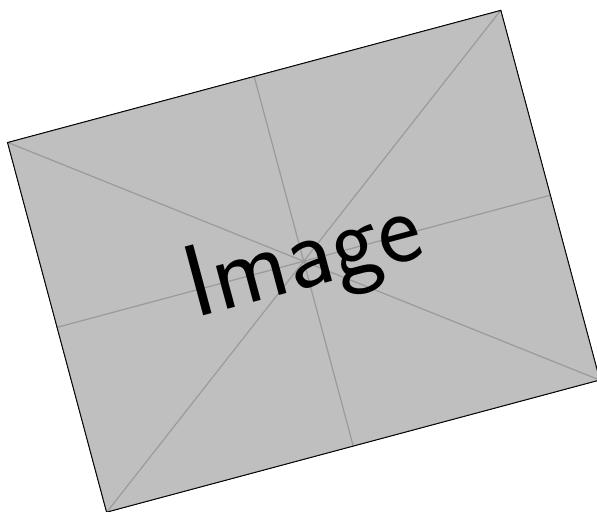
Same image, two different ways to size it:



Some text in between.

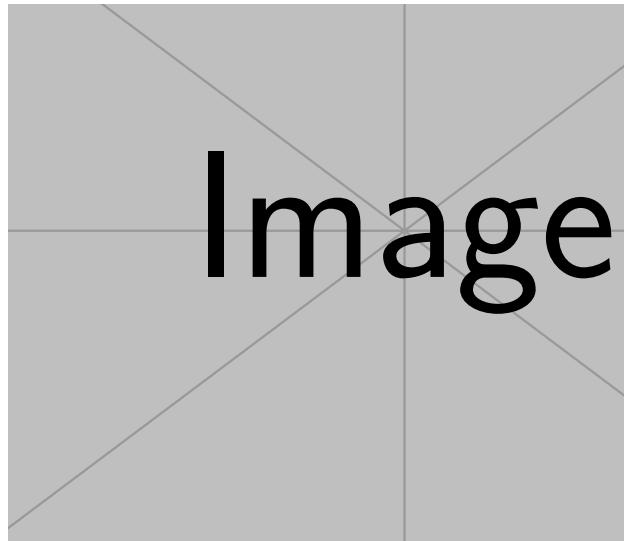


## 2.2 3) Scale and rotation



## 2.3 4) Trimming and clipping

The values in `trim` are *left bottom right top*. Try changing them and recompiling.



### 3 Making images float

#### 3.1 5) Floats with different placement specifiers

We add filler text so floats have a reason to move.

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This is the *test location* in the source.

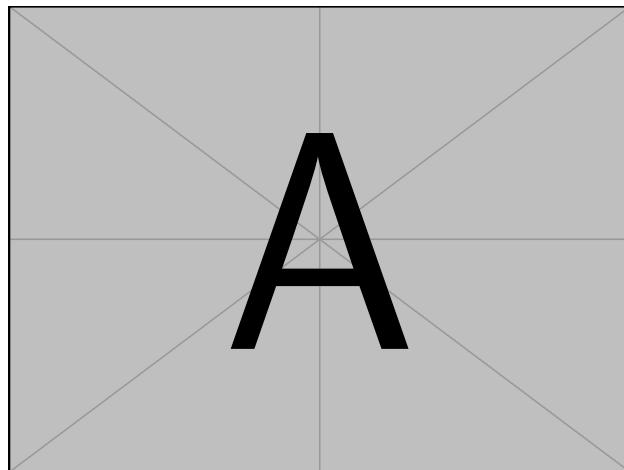


Figure 1: A float with [ht] placement.

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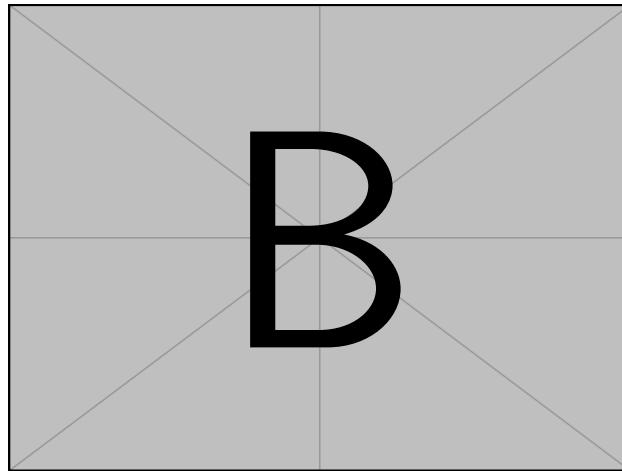


Figure 2: A float with [tb] placement.

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### 3.2 6) Forcing exact placement with [H]

The option [H] (from the `float` package) tries to place the figure exactly “here”. It can create large whitespace, so it is not always recommended.

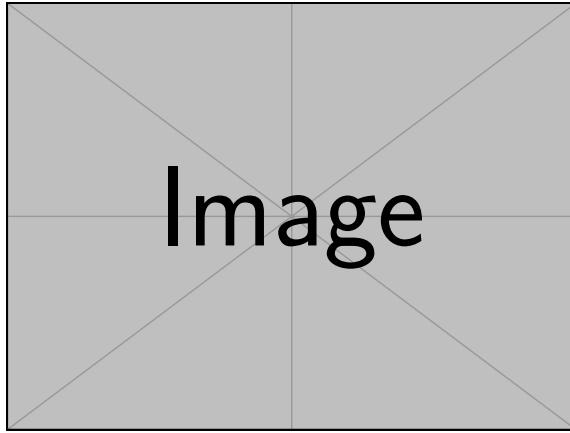


Figure 4: A float forced `[H]` (absolutely here).

## 4 Cross-referencing

### 4.1 7) Referencing figures

See Figure ??, Figure ??, Figure ??, and Figure ??.

If you see ?? the first time, compile again. Cross-references usually need at least 2 runs.

### 4.2 8) \textwidth vs \linewidth

The difference is easiest to notice with `twocolumn`. Compile once without `twocolumn`, then enable it in the `\documentclass` line and compare.

## 5 Label placement experiments

### 5.1 9) What if \label is before \caption?

Correct placement is *after* (or inside) `\caption`. Below we intentionally do it wrong to observe the result.

Now compare references: Correct one: Figure ???. Wrong one (watch what number it picks): Figure ??.

### 5.2 10) Equation labels: inside vs after the environment

$$e^{i\pi} + 1 = 0 \tag{1}$$

Reference (correct): Equation ??.

Now we label *after* the equation environment (wrong on purpose):

$$a^2 + b^2 = c^2 \quad (2)$$

Reference (watch what happens): Equation ??.

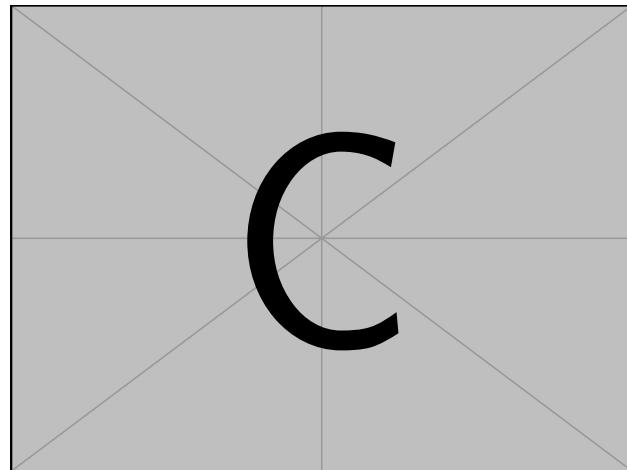


Figure 3: A float with [p] placement (float-only page).

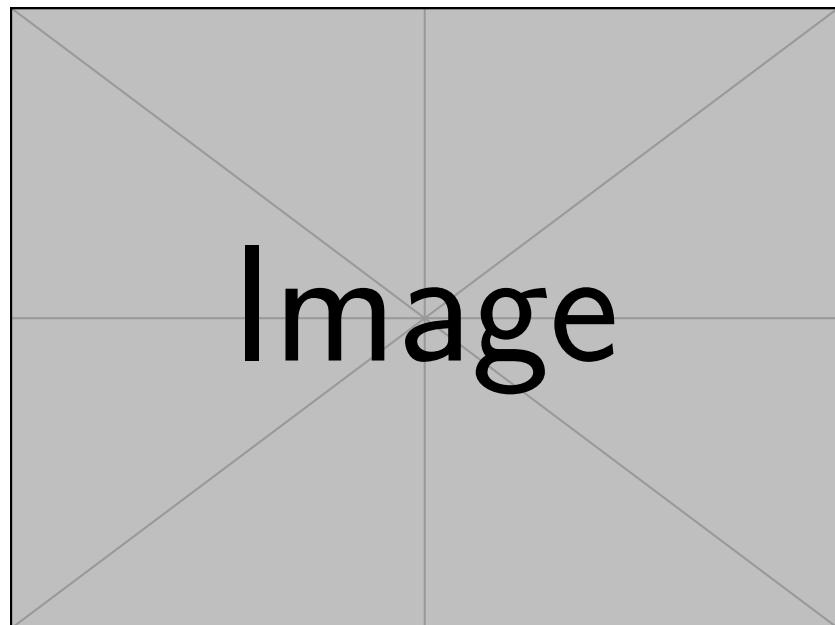


Figure 5: Width set relative to \textwidth.

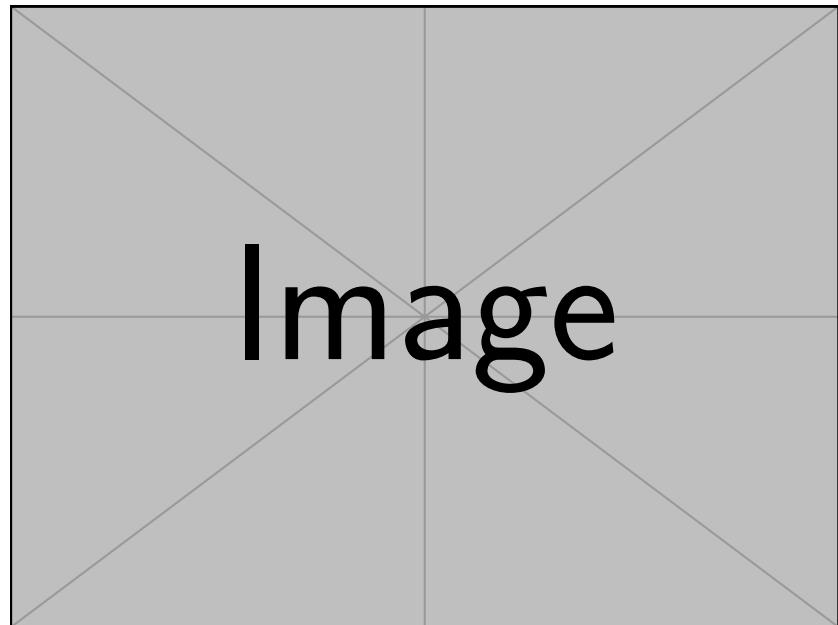


Figure 6: Width set relative to \linewidth.

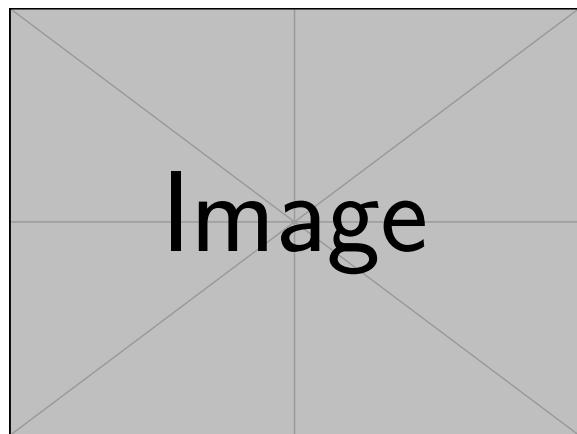


Figure 7: This figure has \label before \caption (wrong on purpose).