Mechanical page proportions refer to page sizes that are dictated by:

- Industry standards. Newspaper pages, for instance, all are a uniform size to accommodate national advertising.
- Economy. By using paper in standard widths, printers save money. For instance, many magazines are in an 8.5 by 11 inch format, the so-called U.S. letter size, because it fits a standard size of paper and produces little waste.
- Packaging. A pamphlet to go with a CD is square, not because it couldn't be some other shape but because it must fit the CD package.
- Custom. Your business card doesn't have to be 3.5 by 2 inches, but that's the customary size.
BROADSHEET:  
12\(\frac{3}{4}\) inches by 22 inches

TABLOID:  
11 inches by 14 inches
## PAGE PROPORTIONS

### Mechanical

<table>
<thead>
<tr>
<th>Size</th>
<th>Proportion</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.25 x 5.5</td>
<td>1 : 1.29</td>
</tr>
<tr>
<td>5.5 x 8.5</td>
<td>1 : 1.55</td>
</tr>
<tr>
<td>4.25 x 2.75</td>
<td>1 : 1.55</td>
</tr>
<tr>
<td>8.5 x 11</td>
<td>1 : 1.29</td>
</tr>
<tr>
<td>11 x 17</td>
<td>1 : 1.55</td>
</tr>
</tbody>
</table>

### Comparison of letter size and half-letter size

- **Letter size double page spread**
- **Half-letter size double page spread**
The A4 page, sometimes called the metric letter-size page, is based on the proportion of 1 to the square root of 2 ($1:1.414$). It is the only page size that replicates its proportions when folded in half.
PAGE PROPORTIONS
Mechanical

Tri-fold brochure: Limited in format by mechanical page size (8.5 x 11) and by envelope size

TRI-FOLD BROCHURE
1 : 2.32
Fits in 9.5 x 4 Business Envelope
Locked-in formats CD covers and booklets are a double square side by side.

Business cards fit a 3.5-inch x 2-inch format.

ONE TIN SOLDIER

“Your place for guns, ammo and shooting supplies”

Cloverdale Plaza
Muskogee, Okla.
1-708-555-1212

Zeke Mirkwood
Natural page proportions mimic proportions found in nature, either in the actual dimensions of plants and animals or in mathematics.

Leonardo Da Vinci (1452-1519) outlined the natural proportions of the circle and square in the human body. Le Corbusier (1887-1965) developed an elaborate design system based on human proportions and the Golden Section.
PAGE PROPORTIONS
Natural
Pages derived from a circle and square

Double ISO page
1 : 2.828

ISO page
1 : 1.414

Perfect square

Double square
1 : 2
The square is seldom used in magazine design, and it is considered too static for newspaper designers, who avoid using square pictures or square story packages. But many designers find working on a square to be a rewarding and satisfying process. The square design provides a solid, restful feel.
Many of the “natural proportions” follow the Pythagorean Theorum in forming rectangles that please the eye. Jay Hambidge, in his good *The Elements of Dynamic Symmetry*, described the “root” rectangles, so named because the proportion is always 1 to a square root. Starting with the square, we draw a diagonal, then rotate it in an arc until the diagonal line lies horizontal. By adding a rectangle to this point, we form a new rectangle, one with a proportion of 1:√2. If we repeat the process with this “root 2” rectangle, we get one with a proportion of 1:√3. Repeat it again and we get a rectangle with a proportion of 1:√4.

This last “root 4” rectangle is actually a double square. Remember, the square root of 4 is 2, so the proportion is 1:2, a double square.
The “Golden Section” has a proportion of 1:$(\sqrt{5})/2$. That works out to about 1:1.618. The Golden Section is less useful for establishing a page size than it is for establishing units on a grid or copy block sizes.
The Golden Section is present in the pentagon: 

\[ a : b = (a + b) : a = 1 : 1.618 \]

Subtract a square from the Golden Section and you have another Golden Section. Add a square to the Golden Section and you have another Golden Section. In this way, it is “self-replicating.”
We can design a page that fits a classical proportion such as the Golden Rectangle, or we can build a text block of classical proportions on an industry standard page. This example uses half of a U.S. letter-size page with a text block that comes close to matching the Golden Rectangle:

\[(41 \div 25 = 1.64)\].

We could adjust the bottom margin to come even closer to the ideal proportion, but it's important to keep your page dimensions simple.

Does this design look familiar?
Let us go then, you and I,
When the evening is spread out against the sky
Like a patient etherised upon a table;
Let us go, through certain half-deserted streets,
The muttering retreats
Of restless nights in one-night cheap hotels
And sawdust restaurants with oyster-shells:
Streets that follow like a tedious argument
Of insidious intent
To lead you to an overwhelming question …
Oh, do not ask, “What is it?”
Let us go and make our visit.

In the room the women come and go
Talking of Michelangelo.

The yellow fog that rubs its back upon the window-panes,
The yellow smoke that rubs its muzzle on the window-panes
Licked its tongue into the corners of the evening,
Lingered upon the pools that stand in drains,
Let fall upon its back the soot that falls from chimneys,
Slipped by the terrace, made a sudden leap,
And seeing that it was a soft October night,
Curled once about the house, and fell asleep.

And indeed there will be time
For the yellow smoke that slides along the street,
Robert Bringhurst has outlined a set of page proportions based on the musical scale. It presents many interesting page shapes, but the page must fit the content.
PAGE PROPORTIONS
Harmonics

When pages of musical proportion are divided into two pages, they produce “harmonics.”

Major 5th / Major 4th — 2:3 / 3:4

Major 3rd / Minor 6th — 4:5 / 5:6

Minor 3rd / Major 6th — 5:6 / 3:5

Unison / Octave — 1:1 / 1:2
To set up a page of a given proportion for printing on a U.S. letter page, first compare the proportion to the letter page proportion of 1.29.

If the proportion is greater than 1.29, then divide that proportion into the long side. In our example, the blue dimensions use the 11-inch side of the paper for a narrower page, that of the Golden Rectangle, with a proportion of 1.618.

If the proportion is less than 1.29, then multiply the proportion times the short side of the paper. In our example, the green dimensions use the 8.5-inch side of the paper for a wider page with a proportion of 1.20.
PAGE PROPORTIONS
How to set up a page of classic proportions

1. Open a new document. Choose U.S. letter, a common mechanical page size. The trick is to use one of the common dimensions while setting the other dimension according to proportion. In this example, we’ve started with a U.S. letter page (8.5 inches by 11 inches), but we’ve figured out that by reducing the width to 6.8 inches, we get a page that fits the Golden Rectangle. To calculate the new page dimension, we divide the proportion into the long side:

\[
11'' \div 1.618 = 6.7985
\]

Ignore the other numbers in this example. Later we’ll talk about setting up the margins.

2. On the master page, use the rule tool to draw a vertical line at each corner. These rules will become your guide for trimming the page after it is printed. Once these are drawn, lock them.

Be aware that choosing a proportion closer to 1:1 may require a different calculation. This example using the Golden Rectangle produced a page that was “taller” than the standard letter page proportion of 1:1.29.
PAGE PROPORTIONS
How to set up a page of classic proportions

Remember that the page must be trimmed to produce the final proportion. By using one side of the page as one dimension, you make the trimming easier.

Next we'll discuss how to determine the margins and define your copy block.