

4.7

THE FOURTH DIMENSION

Can You See It?

2723271 Cindy Alder



Max Weber Interior of the Fourth Dimension ca. 1913.
National Gallery of Art

Interior in the Fourth Dimension
(1913) by Max Weber.

QUESTION OF THE DAY:

What is dimension?

What questions do you have about the fourth dimension?

0 – DIMENSIONAL SPACE

- What is 0 – dimensional space?



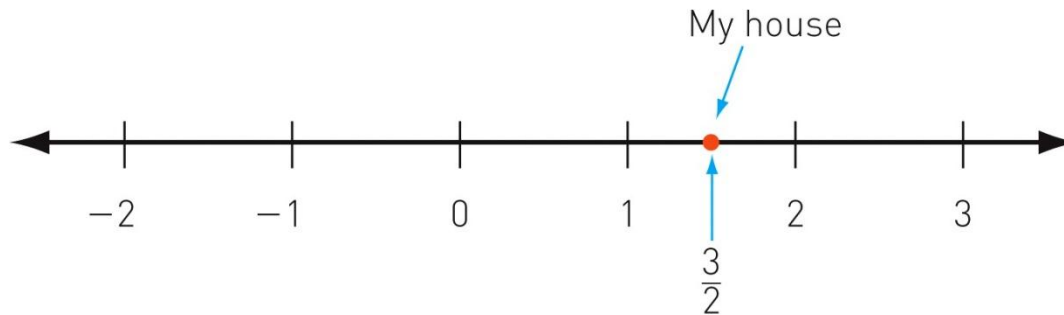
If you lived there,
you'd be home by now.

I – DIMENSIONAL SPACE



Dragging the inked-up point
in a new direction to produce
the 1-dimensional line.

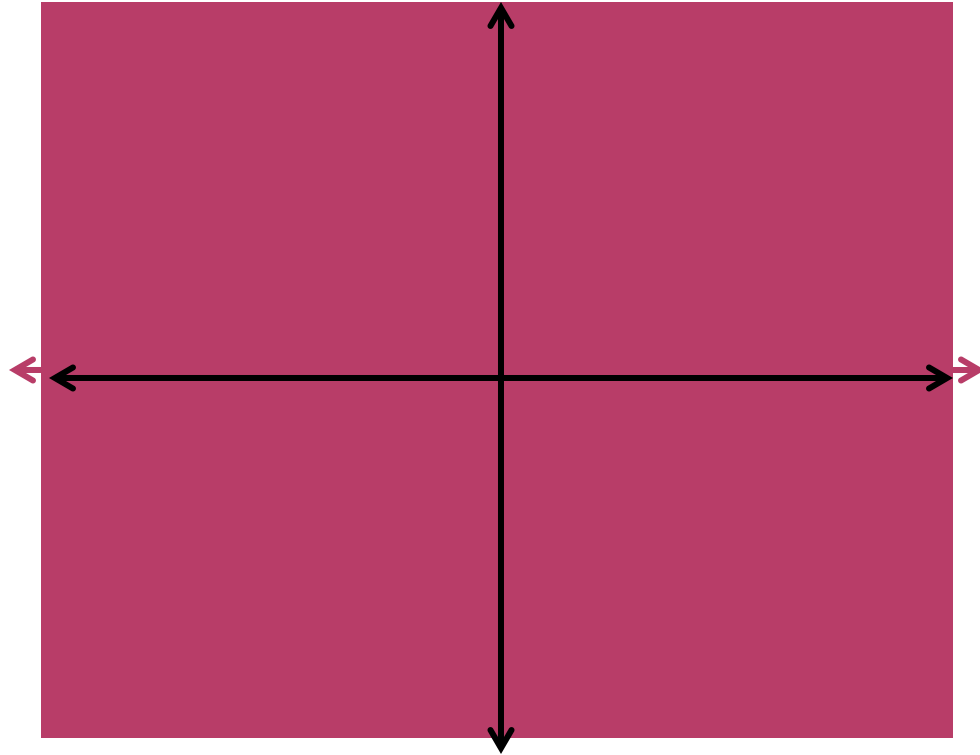
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My address is $\frac{3}{2}$: one piece of
information and you know where
I live implies 1-dimensional space!

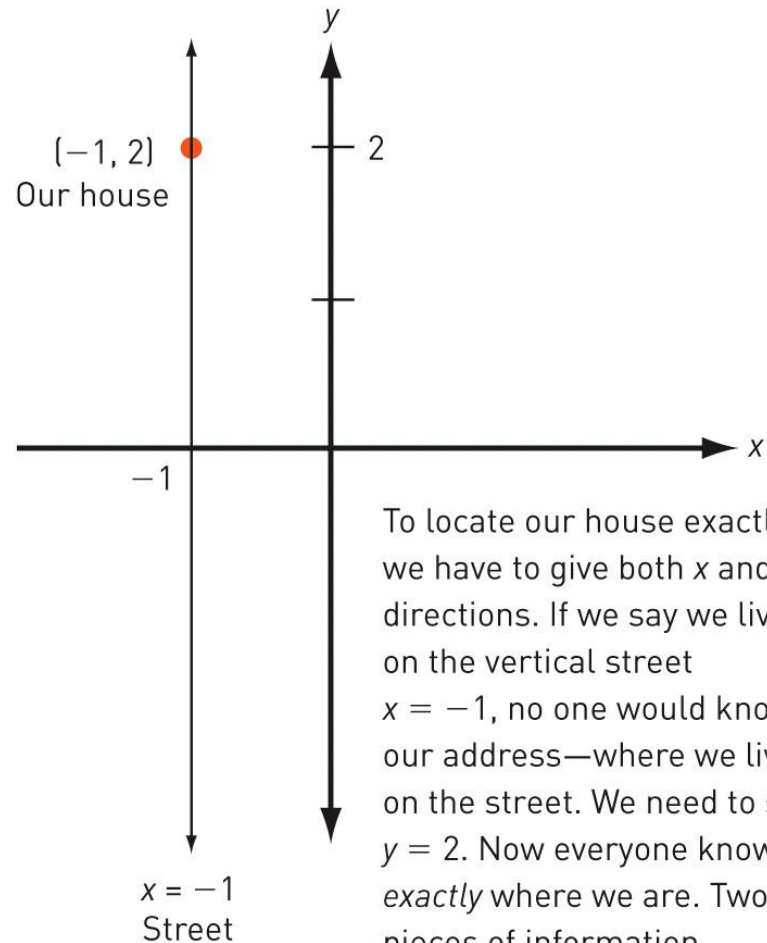
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2 – DIMENSIONAL SPACE



Produces the
2-dimensional plane.

2 – DIMENSIONAL SPACE

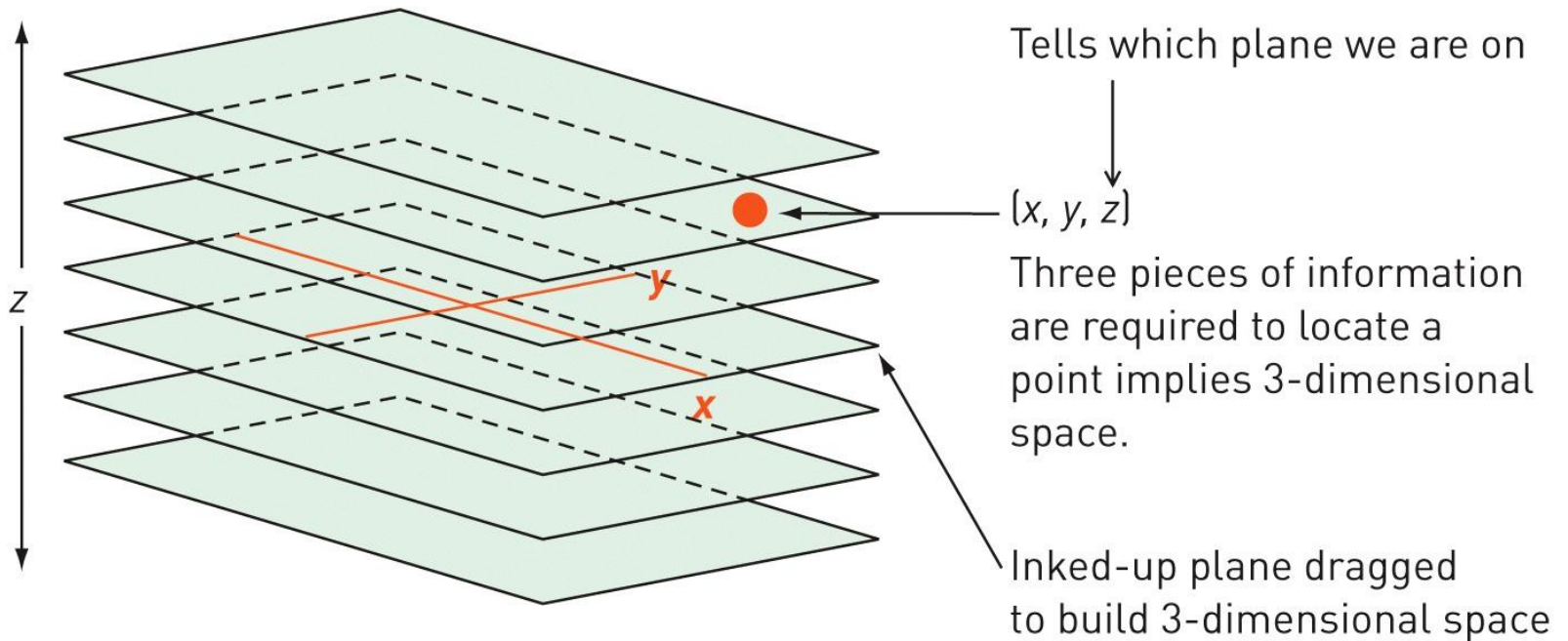


To locate our house exactly, we have to give both x and y directions. If we say we live on the vertical street $x = -1$, no one would know our address—where we live on the street. We need to say $y = 2$. Now everyone knows *exactly* where we are. Two pieces of information implies 2-dimensional space.

3 – DIMENSIONAL SPACE



3 – DIMENSIONAL SPACE



THE FOURTH DIMENSION





THE “STACKING” METHOD

- 
- What would 2-dimensional creatures look like?

Homework

- Read 4.7 The Fourth Dimension pgs. 307-323.
- Mindscapes 4.7 # 1, 7, 12, 14, 16, 18
- Flatland Writing Assignment
- The Math Book Presentation

Resources

- <http://www.wiley.com/WileyCDA/>