

Resources

Cemela
Summer
School
Mathematics
as language
Fact or
Metaphor?

John T.
Baldwin

- 1 Barwise-Etchmendy and Tarski's World
- 2 Geometry books
- 3 articles in education, philosophy and mathematics mostly on web

USA Today – Gallup Poll

Cemela
Summer
School
Mathematics
as language
Fact or
Metaphor?

John T.
Baldwin

A. Evolution, that is, the idea that human beings developed over millions of years from less advanced forms of life is

<i>Definitely</i>	<i>Probably</i>	<i>Probably</i>	<i>Definitely</i>
<i>true</i>	<i>true</i>	<i>false</i>	<i>false</i>
18	35	16	28

B. Creationism, that is, the idea that God created human beings pretty much in their present form at one time within the last 10,000 years is

<i>Definitely</i>	<i>Probably</i>	<i>Probably</i>	<i>Definitely</i>
<i>true</i>	<i>true</i>	<i>false</i>	<i>false</i>
39	27	16	15

How do you tell a sentence is true?

Cemela
Summer
School
Mathematics
as language
Fact or
Metaphor?

John T.
Baldwin

Compositional theory of truth

The truth of sentence ϕ is defined recursively from

- 1 the syntactic rule constructing ϕ from its components
- 2 the truth value of those components.

Vertical Angles

Cemela
Summer
School
Mathematics
as language
Fact or
Metaphor?

John T.
Baldwin

Glencoe Definitions

An **angle** is formed by two **noncollinear** rays that have a common endpoint. The rays are called the sides of the angle.

A **linear pair** is a pair of adjacent angles whose noncommon sides are opposite rays.

Vertical Angles

Cemela
Summer
School
Mathematics
as Language
Fact or
Metaphor?

John T.
Baldwin

Glencoe Definitions

An **angle** is formed by two **noncollinear** rays that have a common endpoint. The rays are called the sides of the angle.

A **linear pair** is a pair of adjacent angles whose noncommon sides are opposite rays.

Vertical angles are two nonadjacent angles formed by two intersecting lines.

Definition/theorem Activity

Cemela
Summer
School
Mathematics
as language
Fact or
Metaphor?

John T.
Baldwin

- 1 Consider the definitions on the next slide
- 2 Then using the summary hand-out of Theorems and postulates from Glencoe, try to prove that 'vertical angles are equal'.

Glencoe sketches proof of Theorem 2.6 but Theorem 2.3 is an exercise with no hints.

What is an angle

Cemela
Summer
School
Mathematics
as language
Fact or
Metaphor?

John T.
Baldwin

Definition (Hilbert)

Let K be any arbitrary plane and h, k any two distinct half-rays lying in K and emanating from the point O so as to form a part of two **different** straight lines. We call the *system* formed by these two half-rays h, k an angle and represent it by the symbol $\sphericalangle (h, k)$ or $\sphericalangle (k, h)$.

The reason to avoid straight angles is so that each angle will have a well defined 'interior'.

Wrap-up

Cemela
Summer
School
Mathematics
as language
Fact or
Metaphor?

John T.
Baldwin

- 1 What in today's class was the most useful to you?
- 2 What didn't work?
- 3 questions or comments