- `eqnarray` is an environment for typesetting a group of equations (or inequalities) in a vertical array which align properly.
- `\footnote` is the LaTeX command for making footnotes, but is also commonly used for information associated with the author's name or article's title. (For example, a comment such as "Research supported in part by NSA Grant...")
- `\ref` and `\label` are the LaTeX commands which allow you to refer to the number automatically given to an object in your paper (such as a theorem number or figure number) without having to type it in explicitly. In ASTEX, many of the things which you would want to refer to are "labelled" automatically.

D *Examples of Articles in ASTEX*

Here I present two (short) examples of articles typeset in ASTEX. Note, in particular, the way the claims are done and the way the bibliography references are done.

The commands below produced the article in Figure 13.13:

```
\newcommand{\Gamhat}{\hat\Gamma}
\newcommand{\g}{{\bf g}}   % DEFINITIONS which you want to use
\newcommand{\ghat}{\hat\g}           % go at the beginning

\title{A Completely Bogus Theory of Algebro-Analytic Geometry}

\author{J.S. Smith}[Department of Mathematics][University of
Bogosity][Bogosity, IL]
```

A Completely Bogus Theory of Algebro-Analytic Geometry

J.S. SMITH
Department of Mathematics
University of Bogosity
Bogosity, IL

J. DOUGH
Collegiate College
New York, NY

Abstract: It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Bogus. In addition, the bogosity of the well known Corollary to Kafka's Metamorphosis is shown to be equivalent to a free dinner at your favorite local restaurant.

1 Introduction

It is shown (Theorem 2.1) that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Bogus. In addition, the bogosity of the well known Corollary to Kafka's Metamorphosis *[2]* is shown to be equivalent to a free dinner at your favorite local restaurant. If you think this sounds like the abstract above, then you are right. This is the very essense of bogosity, as it is viewed in the post-Galilean period. It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Bogus. In addition, the bogosity of the well known Corollary to Kafka's Metamorphosis is shown to be equivalent to a free dinner at your favorite local restaurant.

2 The First Claim

The theory of bogosity *[2]* has found many applications in getting academians grant money *[2–3, 4]*. In this paper, we hope to get our hands on some of that money. It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Bogus. In addition, in Section 2.1, the bogosity of the well known Corollary to Kafka's Metamorphosis is shown to be equivalent to a free dinner at your favorite local restaurant. First we will prove the following theorem.

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Pages 1– 2

2 J.S. Smith and J. Dough

Theorem 2.1: *Every bogus statement can be restated so as to sound still bogus but not so bogus as it might have sounded. This can be stated as:*

$$x^2 + y = 23 \sin\theta$$

where x is not as big as y unless they are irrational in which case who cares.

Proof: The proof can be divided into three parts, but I will do it in one anyway because I'm getting tired of typing this bogosity. The basic idea of the proof is that:

$$\begin{aligned} x &= \sinh\theta + \frac{23}{x^2} \\ &= \hat\Gamma(\mathbf{g}) \\ &= \Gamma(\hat{\mathbf{g}}) \end{aligned}$$

This can be determined from a simple calculation. □

It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Bogus. In addition, the bogosity of the well known Corollary to Kafka's Metamorphosis is shown to be equivalent to a free dinner at your favorite local restaurant.

2.1 The Corollary

The most famous corollary in the theory of bogosity is Kafka's Corollary *[2, 1]*. It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Bogus. In addition, the bogosity of the well known Corollary to Kafka's Metamorphosis is shown to be equivalent to a free dinner at your favorite local restaurant. The modern statement of the corollary is

Corollary A: *The invsicid flow of solitons in probablility theory displays the shock waves common to the functional analysis in number theory which arises in the study of inequalities of the form*

$$A + B < \Gamma(\mathbf{g}) - \hat\Gamma(\hat{\mathbf{g}})$$

only when A and B are smaller than they could be otherwise.

References

[1] B. Band, "The Bogosity of Big Birational Beepers", *Bogus Biannual*, Vol. 93, (1993)
[2] B. Kafka, "The Bogosity of Small Birational Bleepers", *Bogus Annual*, Vol. 3, (1923)
[3] M. Hand, "Bogosity in Birational Bloopers", *The Bogus Review*, Vol. 9, (1990)
[4] B. Bleh, "The Bogosity of Corollary and Quantum Physics", *Physica Bogusa*, Vol. 99, (1994)

Figure 13.13

```
\author{J. Dough}[Collegiate College][New York, NY]

\abstract{It is shown that any theory of algebro-analytic geometry
which claims to prove that the purpose of the universe is to produce
solutions to partial differential equations is Bogus.  In addition,
the bogosity of the well known Corollary to Kafka's Metamorphosis is
shown to be equivalent to a free dinner at your favorite local
restaurant.}

\section{Introduction}

It is shown (Theorem~\ref{thm:bogus}) that any theory of
algebro-analytic geometry which claims to prove that the purpose of
the universe is to produce solutions to partial differential equations
is Bogus.  In addition, the bogosity of the well known Corollary to
Kafka's Metamorphosis \bibref[Kafka] is shown to be equivalent to a
free dinner at your favorite local restaurant.  If you think this
sounds like the abstract above, then you are right.  This is the very
essense of bogosity, as it is viewed in the post-Galilean period.  It
is shown that any theory of algebro-analytic geometry which claims to
prove that the purpose of the universe is to produce solutions to
partial differential equations is Bogus.  In addition, the bogosity of
the well known Corollary to Kafka's Metamorphosis is shown to be
equivalent to a free dinner at your favorite local restaurant.

\section{The First Claim}

The theory of bogosity \bibref[Kafka] has found many applications in
getting academians grant money \bibref[Kafka--MH,Bleh].  In this
paper, we hope to get our hands on some of that money.  It is shown
that any theory of algebro-analytic geometry which claims to prove
that the purpose of the universe is to produce solutions to partial
differential equations is Bogus.  In addition, in
Section~\ref{subsec:cor}, the bogosity of the well known Corollary to
Kafka's Metamorphosis is shown to be equivalent to a free dinner at
your favorite local restaurant.  First we will prove the following
theorem.

\begin{theorem}[thm:bogus]{Every bogus statement can be restated so as
to sound still bogus but not so bogus as it might have sounded.  This
can be stated as:
$$
x^2+y=23 \sin \theta
$$
where $x$ is not as big as $y$ unless they are irrational in which
case who cares.}
The proof can be divided into three parts, but I will do it in one
```

```latex
anyway because I'm getting tired of typing this bogosity.  The basic
idea of the proof is that:
\begin{eqnarray*}
x &=& \hbox{sinh}\,\theta + \frac{23}{x^2}\\
 &=& \Gamhat(\g)\\
 &=& \Gamma(\ghat)
\end{eqnarray*}
This can be determined from a simple calculation.
\end{theorem}

It is shown that any theory of algebro-analytic geometry
which claims to prove that the purpose of the universe is to produce
solutions to partial differential equations is Bogus.  In addition,
the bogosity of the well known Corollary to Kafka's Metamorphosis is
shown to be equivalent to a free dinner at your favorite local
restaurant.

\subsection{The Corollary}\label{subsec:cor}

The most famous corollary in the theory of bogosity is Kafka's
Corollary \bibref[Kafka,Bb].  It is shown that any theory of
algebro-analytic geometry which claims to prove that the purpose of
the universe is to produce solutions to partial differential equations
is Bogus.  In addition, the bogosity of the well known Corollary to
Kafka's Metamorphosis is shown to be equivalent to a free dinner at
your favorite local restaurant.  The modern statement of the corollary
is
\statecorollary<A>{The invsicid flow of solitons in probablility
theory displays the shock waves common to the functional analysis in
number theory which arises in the study of inequalities of the form
$$
A + B < \Gamma(\g) - \Gamhat(\ghat)
$$
only when $A$ and $B$ are smaller than they could be otherwise.}

\begin{bibliography}
\bibitem[Bb]{B. Band, ``The Bogosity of Big Birational Beepers'', {\it
Bogus Biannual}, Vol. 93, (1993)}
\bibitem[Kafka]{B. Kafka, ``The Bogosity of Small Birational
Bleepers'', {\it Bogus Annual}, Vol. 3, (1923)}
\bibitem[MH]{M. Hand, ``Bogosity in Birational Bloopers'', {\it
The Bogus Review}, Vol. 9, (1990)}
\bibitem[Bleh]{B. Bleh, ``The Bogosity of Corollary and Quantum
Physics'', {\it Physica Bogusa}, Vol. 99, (1994)}
\end{bibliography}
```

The commands below produced the article in Figure 13.14:

```
\newclaim{whosy}       % A NEW KIND OF CLAIM (like theorem or corollary)
\newcommand{\Gamhat}{S^y+S^x}
\newcommand{\g}{g_g}            % DEFINITIONS which you want to use
\newcommand{\ghat}{g^g}


\title{A Completely Super Theory of Analytic Geometric Algebra}

\author{S.J. Smith\footnote{Supported by his mother}}[Department of
Mathematics][University of Supremacy][Supremacy, IL]

\author{K.P. Equation}[Collegiate College][New York, NY]

\abstract{It is shown that any theory of algebro-analytic geometry
which claims to prove that the purpose of the universe is to produce
solutions to partial differential equations is Super.  In addition,
the Supremacy of the well known Corollary to Kafka's Metamorphosis is
shown to be equivalent to a free dinner at your favorite local
restaurant.}
```

A Completely Super Theory of Analytic Geometric Algebra

S.J. Smith[1]
Department of Mathematics
University of Supremacy
Supremacy, IL

K.P. Equation
Collegiate College
New York, NY

Abstract: It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Super. In addition, the Supremacy of the well known Corollary to Kafka's Metamorphosis is shown to be equivalent to a free dinner at your favorite local restaurant.

1 Introduction

It is shown (Whosy 2.1) that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Super. In addition, the Supremacy of the well known Corollary to Kafka's Metamorphosis *[2]* is shown to be equivalent to a free dinner at your favorite local restaurant. If you think this sounds like the abstract above, then you are right. This is the very essense of Supremacy, as it is viewed in the post-Galilean period. It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Super. In addition, the Supremacy of the well known Corollary to Kafka's Trial is shown to be equivalent to a free dinner at your favorite local restaurant.

2 A Section Starts Here

The theory of Supremacy *[2]* has found many applications in getting academians grant money *[2–3, 4]*. In this paper, we hope to get our hands on some of that money. It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Super. It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations

[1] Supported by his mother

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Pages 3– 4

4 S.J. Smith and K.P. Equation

is Super. In addition, in Section 2.1, the Supremacy of the well known Corollary to Kafka's Metamorphosis is shown to be equivalent to a free dinner at your favorite local restaurant. First we will prove the following Whosy.

Whosy 2.1: *Every super statement can be restated so as to sound still super but not so super as it might have sounded. This can be stated as:*

$$x^2 + y = 23\sin\theta$$

where x is not as big as y unless they are irrational in which case who cares.

Proof: The proof can be divided into three parts, but I will do it in one anyway because I'm getting tired of typing this Supremacy. The basic idea of the proof is that:

$$\begin{aligned} x &= \sinh\theta + \frac{23}{x^2} \\ &= S^y + S^x(g_g) \\ &= \Gamma(g^g) \end{aligned}$$

This can be determined from a simple calculation. □

It is shown that any theory of analytic geometric algebra which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Super. In addition, the Supremacy of the well known Corollary to Kafka's Trial is shown to be equivalent to a free dinner at your favorite local restaurant.

2.1 The Corollary

The most famous corollary in the theory of Supremacy is Kafka's Corollary *[2, 1]*. It is shown that any theory of algebro-analytic geometry which claims to prove that the purpose of the universe is to produce solutions to partial differential equations is Super. In addition, the Supremacy of the well known Corollary to Kafka's Metamorphosis is shown to be equivalent to a free dinner at your favorite local restaurant. The modern statement of the corollary is

Corollary: *The invsicid flow of solitons in probablility theory displays the shock waves common to the functional analysis in number theory which arises in the study of inequalities of the form*

$$A + B < \Gamma(g_g) - S^y + S^x(g^g)$$

only when A and B are smaller than they could be otherwise.

Acknowledgments: K.P. Equation would like to thank the staff at the Holiday Inn at which she stayed while working on the majority of this research. She is especially grateful for the room service. The other author is a complete ingrate and thanks nobody.

References

[1] B. Band, "The Supremacy of Big Birational Beepers", *Super Biannual*, Vol. 93, (1993)

[2] B. Kafka, "The Supremacy of Small Birational Bleepers", *Super Annual*, Vol. 3, (1923)

[3] M. Hand, "Supremacy in Birational Bloopers", *The Super Review*, Vol. 9, (1990)

[4] B. Bleh, "The Supremacy of Corollary and Quantum Physics", *Physica Supera*, Vol. 99, (1994)

Figure 13.14

```
\section{Introduction}

It is shown (Whosy~\ref{thm:super}) that any theory of
algebro-analytic geometry which claims to prove that the purpose of
the universe is to produce solutions to partial differential equations
is Super.  In addition, the Supremacy of the well known Corollary to
Kafka's Metamorphosis \bibref[Kafka] is shown to be equivalent to a
free dinner at your favorite local restaurant.  If you think this
sounds like the abstract above, then you are right.  This is the very
essense of Supremacy, as it is viewed in the post-Galilean period.  It
is shown that any theory of algebro-analytic geometry which claims to
prove that the purpose of the universe is to produce solutions to
partial differential equations is Super.  In addition, the Supremacy of
the well known Corollary to Kafka's Trial is shown to be
equivalent to a free dinner at your favorite local restaurant.

\section{A Section Starts Here}
The theory of Supremacy \bibref[Kafka] has found many applications in
getting academemians grant money \bibref[Kafka--MH,Bleh].  In this
paper, we hope to get our hands on some of that money.  It is shown
that any theory of algebro-analytic geometry which claims to prove
that the purpose of the universe is to produce solutions to partial
differential equations is Super.  It is shown that any theory of
algebro-analytic geometry which claims to prove that the purpose of
the universe is to produce solutions to partial differential equations
is Super.  In addition, in Section~\ref{subsec:cor}, the Supremacy of
the well known Corollary to Kafka's Metamorphosis is shown to be
equivalent to a free dinner at your favorite local restaurant.  First
we will prove the following Whosy.

\begin{whosy}[thm:super]{Every super statement can be restated so as
to sound still super but not so super as it might have sounded.  This
can be stated as:
$$
x^2+y=23 \sin \theta
$$
where $x$ is not as big as $y$ unless they are irrational in which
case who cares.}
The proof can be divided into three parts, but I will do it in one
anyway because I'm getting tired of typing this Supremacy.  The basic
idea of the proof is that:
\begin{eqnarray*}
x &=& \hbox{sinh}\,\theta + \frac{23}{x^2}\\
 &=& \Gamhat(\g)\\
 &=& \Gamma(\ghat)
\end{eqnarray*}
This can be determined from a simple calculation.
```

```
\end{whosy}

It is shown that any theory of analytic geometric algebra
which claims to prove that the purpose of the universe is to produce
solutions to partial differential equations is Super.  In addition,
the Supremacy of the well known Corollary to Kafka's Trial is
shown to be equivalent to a free dinner at your favorite local
restaurant.

\subsection{The Corollary}\label{subsec:cor}

The most famous corollary in the theory of Supremacy is Kafka's
Corollary \bibref[Kafka,Bb].  It is shown that any theory of
algebro-analytic geometry which claims to prove that the purpose of
the universe is to produce solutions to partial differential equations
is Super.  In addition, the Supremacy of the well known Corollary to
Kafka's Metamorphosis is shown to be equivalent to a free dinner at
your favorite local restaurant.  The modern statement of the corollary
is
\statecorollary<->{The invsicid flow of solitons in probablility
theory displays the shock waves common to the functional analysis in
number theory which arises in the study of inequalities of the form
$$
A + B < \Gamma(\g) - \Gamhat(\ghat)
$$
only when $A$ and $B$ are smaller than they could be otherwise.}

\note[Acknowledgments] K.P. Equation would like to thank the staff at
the Holiday Inn at which she stayed while working on the majority of
this research.  She is especially grateful for the room service.  The
other author is a complete ingrate and thanks nobody.

\begin{bibliography}
\bibitem[Bb]{B. Band, ``The Supremacy of Big Birational Beepers'',
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\bibitem[Kafka]{B. Kafka, ``The Supremacy of Small Birational
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\bibitem[MH]{M. Hand, ``Supremacy in Birational Bloopers'', {\it
The Super Review}, Vol. 9, (1990)}
\bibitem[Bleh]{B. Bleh, ``The Supremacy of Corollary and Quantum
Physics'', {\it Physica Supera}, Vol. 99, (1994)}
\end{bibliography}
```

E *Counters*

This is, essentially, merely a repitition of the information contained in the LaTeX book. However, since counters are used frequently in ASTEX, and since you will possibly want to modify them in your format file, I will review it here.

A counter is a variable which stores an integer value. For example, there is an `page` counter, which keeps track of the page number; in an `enumerate` environment (such as exercises), the counter `enumi` keeps track of the number, etc.

Associated to each counter is a command which actually prints the value. This command is called `\theCTNAME` where `CTNAME` is the name of the counter. So, for example, the page number is printed by the command `\thepage`. You can *change* this command to affect how the page number is expressed. Generally, `\thepage` is defined to be `\arabic{page}`, which means "the page number as an arabic numeral". You can include the definition:

```
\def\thepage{\roman{page}}
```

in a file and then the page numbers will be printed in lower case Roman numerals. In all, you can use the commands `\arabic`, `\roman`, `\Roman`, `\alph`, `\Alph` and `\numberword` in this way with counters[7]. Furthermore, you can display the counters in more complicated ways.

In a book, the figure number is often printed as the chapter number followed by a figure number. To do this in LaTeX, you would define

```
\def\thefigure{\thechapter.\arabic{figure}}
```

Similarly, `\def\thepage{\thesection.\arabic{page}}` would cause the page numbers to include the number of the current section! The commands `\articledefaults` and `\textbookdefaults` set up the counters in a standard manner for the medium. However, after this command is called, you can modify individual counters to be printed in any manner you wish.

F *Trouble Shooting*

Following, in no particular order that I can think of, are some common problems that you might have with LaTeX or ASTEX and suggested solutions.

- The standard LaTeX error "No item error" generally means that there was an `enumerate` or `itemize` environment with no items (or something else before the first item). This problem would arise, for instance, if there was an exercise list which did not contain *any* printed items.
- The command `\loadps` will not work if you do not have the package `psfig`. Check the log file, it would warn you if ASTEX was unable to find this package. With a little work, you should be able to modify `\loadps` to work with any other package for loading encapsulated postscript.
- `\loadps` will also not work if you do not provide a size *and* it is not contained in an `aspic` environment.
- If you ever get an error which complains about "`space factor`", this problem is most likely caused by the `\catcode` of the character "`@`". Let me explain briefly, for further information consult the TeXbook. Each character has a `\catcode`, which is a number indicating the ways in which the character can be used. Normally, the `\catcode` of `@` is 12, which means that it cannot be used in command names. (In particular, in most situations you cannot define a command called `\in@out`; TeX will read that as the command `\in` followed by `@out`. However, in style files (as well as in ASTEX format, def and font files) the `\catcode` of `@` is changed to 11 so that it can be used. In summary, if you want to use or define a command

[7] All but the last of these are LaTeX commands.

with an `@` in it, you must either do it in a style, format, defs or font file, or you must change the `\catcode`. If you do change the `\catcode`, remember to change it back.

- If you are trying to use the "auto-page by issue" feature of ASTEX and it is not working, check the following things. Have you specified that you want to use this feature with the `\autopagebyissue` command or the `\articledefaults` command? Have you specified the issue number of the current issue with the `\issuenum` command? Have you defined the variable `\issuenumdir` so that ASTEX knows where to store the information about the last page number? If you have done all of this correctly, then ASTEX should be looking for the last page number of the previous issue. Look in the directory `\issuenumdir` to see if there actually is a file specifying the last page number of the previous issue. You can also read the `.log` file to see where it is looking. A line such stating "`file not found`" should be printed there if no last page file was found. In addition, remember to use the switches `\startoddpage` and `\startartodd` to get the right parity for your first page.

14 Index