

# Business Statistics

## MGT 233

### Contact Information

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### Required Course Materials

Statistics for Business and Economics,  
10e, 11e, or 12e editions,  
Anderson, Sweeney, Williams (Southwestern)  
- Do not purchase any international version

Hand-held calculator with scientific  
functions ( $e^x$ ,  $\log$ ,  $x^y$ ,  $x!$ )  
Access to Microsoft Excel 2013

### Course Performance Evaluation

Each student is responsible for all assigned  
material and material presented in class. Instructors  
may be introduced that is neither contained in  
nor listed in this proposed course outline.  
The instructor reserves the right to introduce or delete  
material from this proposed course outline. Grade assignments  
correspond to standard UNK policy.

400 points : 4 examination: 100 points  
100points : homework and quiz average

500 points total  
(see the class syllabus for homework)

# Contact Information

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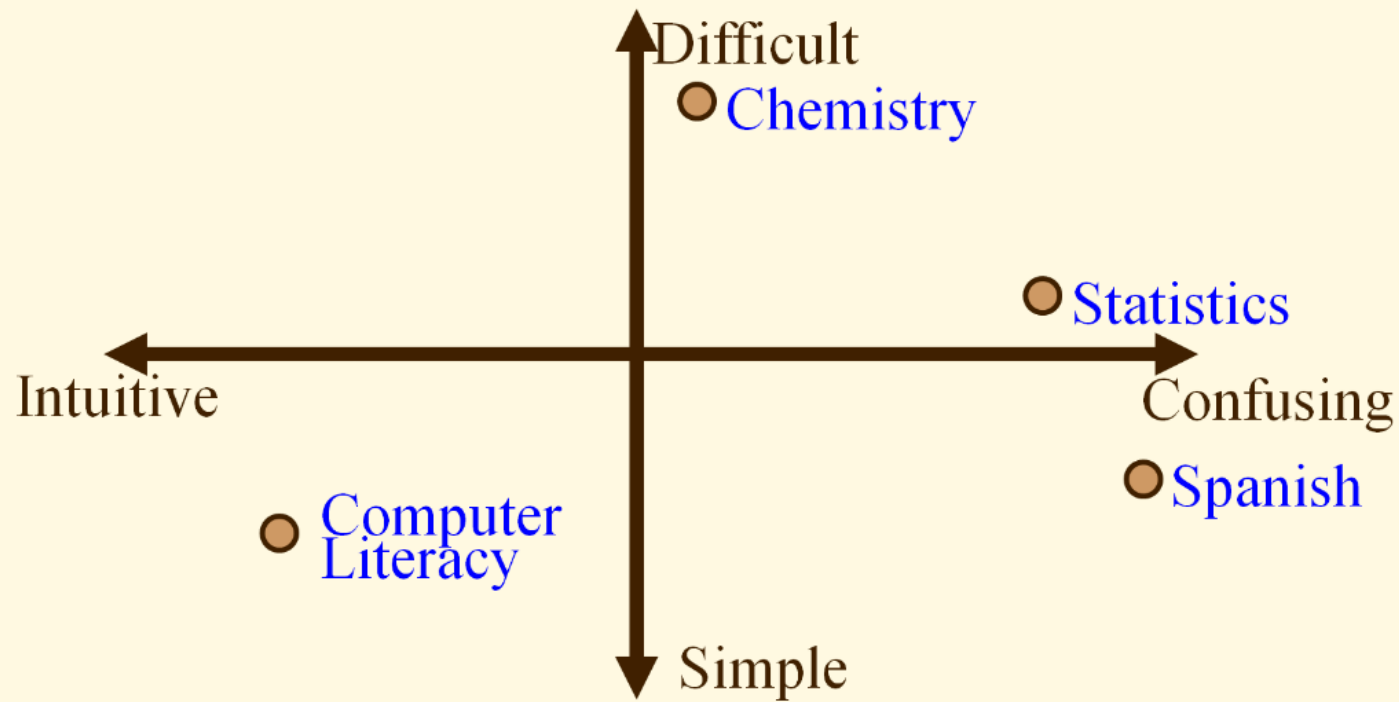
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-How do I get an

#A?

# Course Perception Given Student Study Habits



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500 points total  
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# So, why should you take Business Statistics?

Who has the burden of proof?

What is truth?

How do you know?

Where is the proof?

How close is true enough?

What is the difference between lies and deception?

Business Statistics is really an ETHICS course with mathematics tossed in to confuse students

Freakonomics





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What is truth?

How do you know?

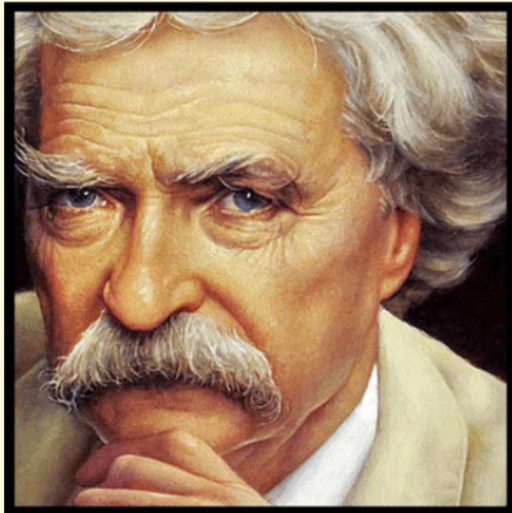
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"There are three kinds of lies: lies, damned lies, and statistics."

Mark Twain

# Chapter 1

## What is Statistics?

A scientific discipline concerned with:

- the collection, analysis, and interpretation of quantitative and qualitative data,

# What is Statistics?

A scientific discipline concerned with:

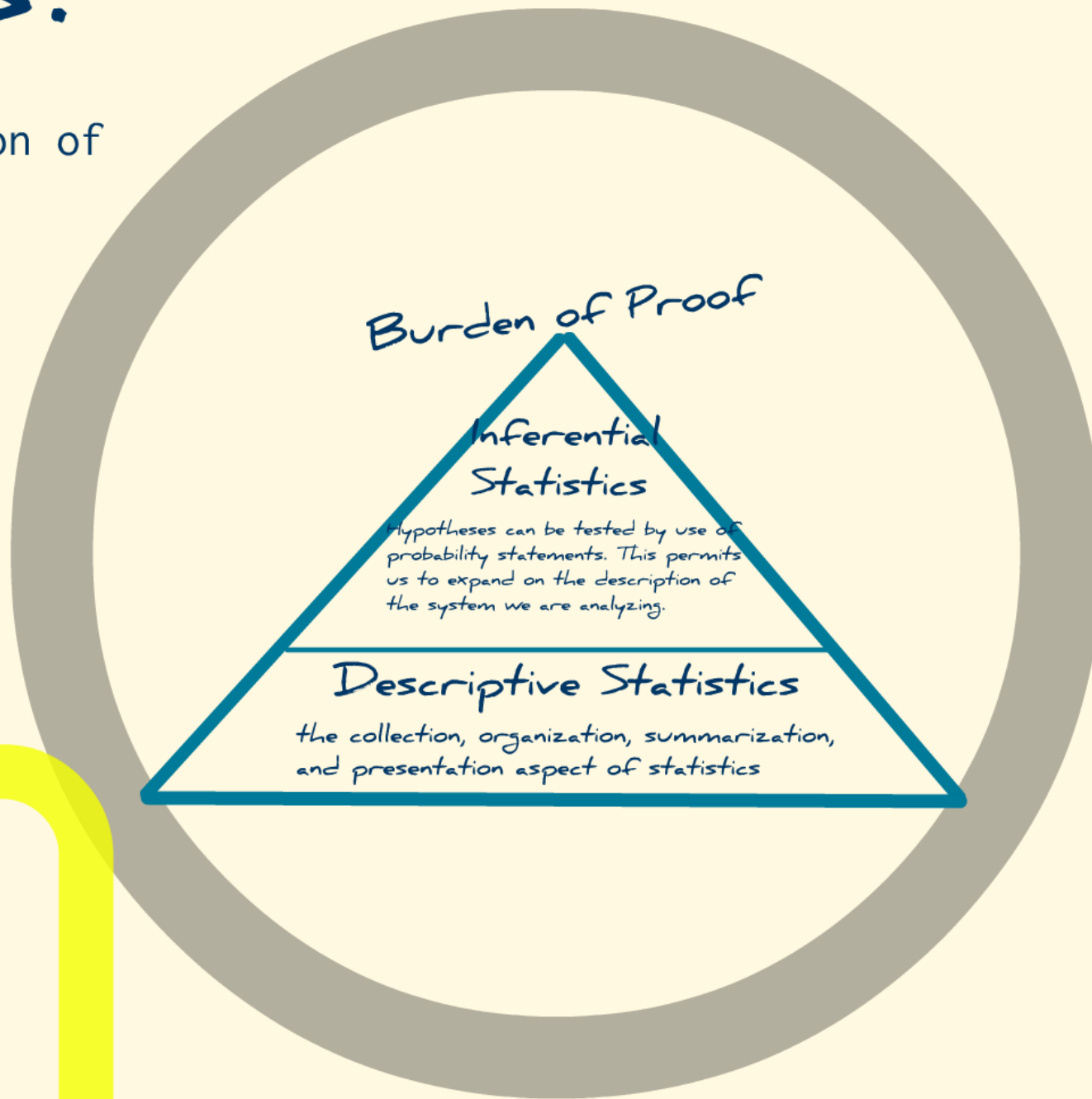
- the collection, analysis, and interpretation of quantitative and qualitative data,
- such that, inferences involving such data
- can be objectively evaluated in terms of probability statements.

# Statistics!

with:  
interpretation of  
data,

such data

terms of



- can be  
probab

# Scientific Method

Principles and procedures for the systematic pursuit of knowledge involving

- the recognition of a problem and the formulation of a hypothesis,
- the collection of data through observation and experiment, and
- the testing of the hypothesis.

# UNK Sportswear



les

Interval Data

# Wrong Approach

- Facts

- Understanding

- Wisdom

Cor



# Correct Approach

-Widsom

-Understanding

-Facts

-Knowledge

ment

# Data Scales

## Nominal Data

Mutually exclusive and exhaustive categories, distinguish one object or event from another object or event (Qualitative)



Qualitative Data  
(quality)

## Ordinal Data

Mutually exclusive and exhaustive categories, ranked and ordered so that position has an interpretable and significant meaning (Qualitative)



Quantitative Data  
(quantity)  
measurable

## Interval Data

Mutually exclusive and exhaustive intervals (sets of groups) of continuous or discrete values.

- A constant unit of measure
- zero is arbitrarily defined

Interstate mile markers: unit is miles, zero is first  
temperature: unit is degrees Celsius, zero is  
Celsius

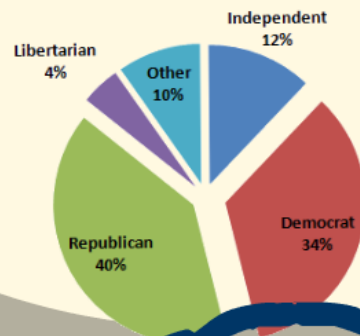
## Ratio Data

same as Interval Data plus  
• zero is absolutely defined

Checking balance: unit is dollars, zero is first zero  
Credit hours passed: unit is credit hours, zero is  
Gas tank: unit is gallons, zero is first to tank

# Nominal Data

Mutually exclusive and exhaustive categories, distinguish one object or event from another object or event (Qualitative)



Qualitative

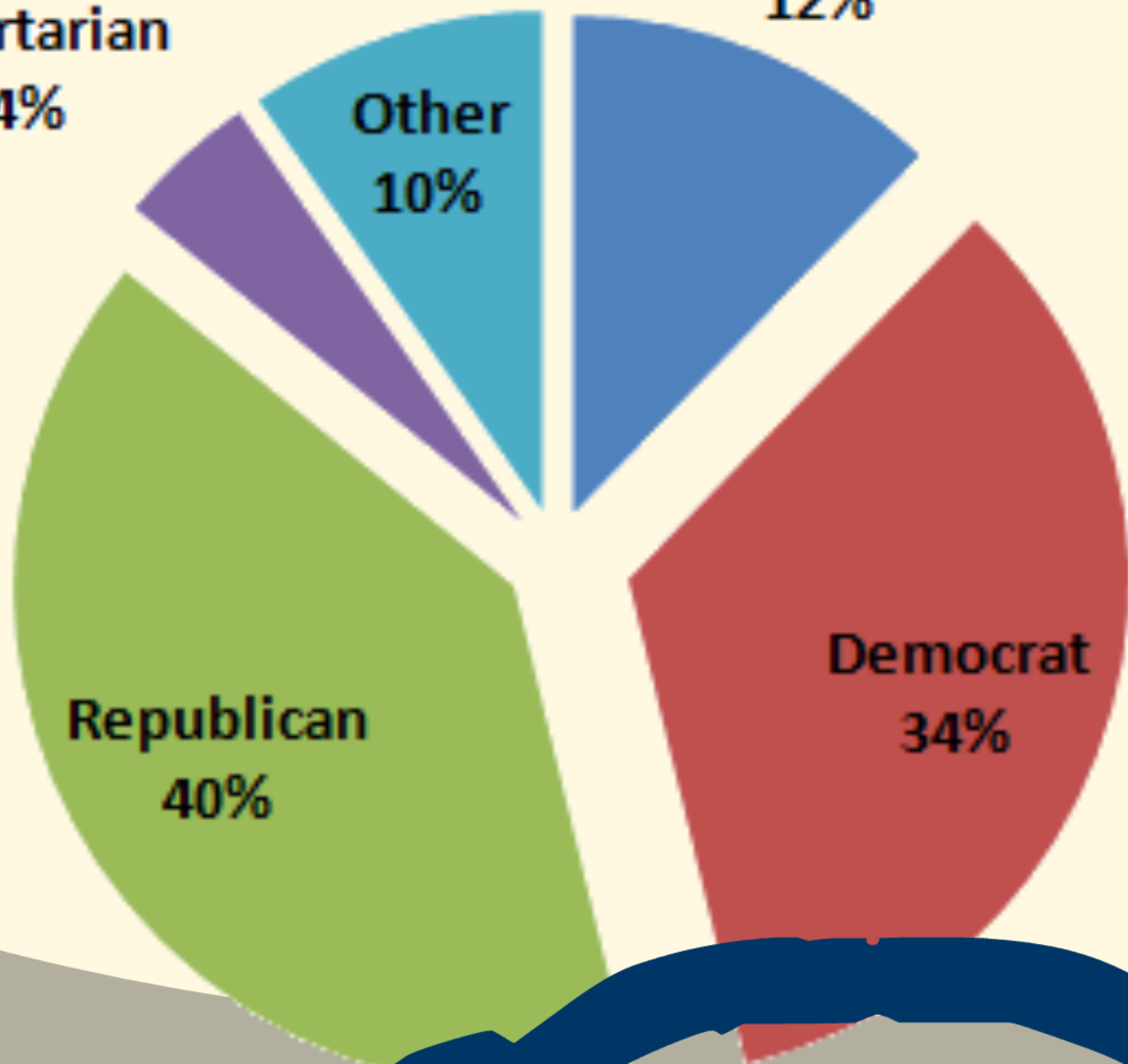
**Libertarian**  
4%

**Other**  
10%

**Independent**  
12%

**Republican**  
40%

**Democrat**  
34%



# Ordinal Data

Mutually exclusive and exhaustive categories, ranked and ordered so that position has an interpretable and significant meaning (Qualitative)

Given my background and interests, the material in this course is:

- (5) very difficult
- (4) difficult
- (3) about right
- (2) easy
- (1) very easy

How do you determine to choose:

a '3' rather than a '2'?

a '2' rather than a '1'?

Is your '3' the same as someone else's '3'?



# ing (Qualitative)

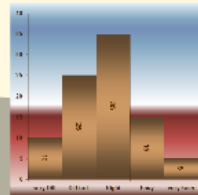
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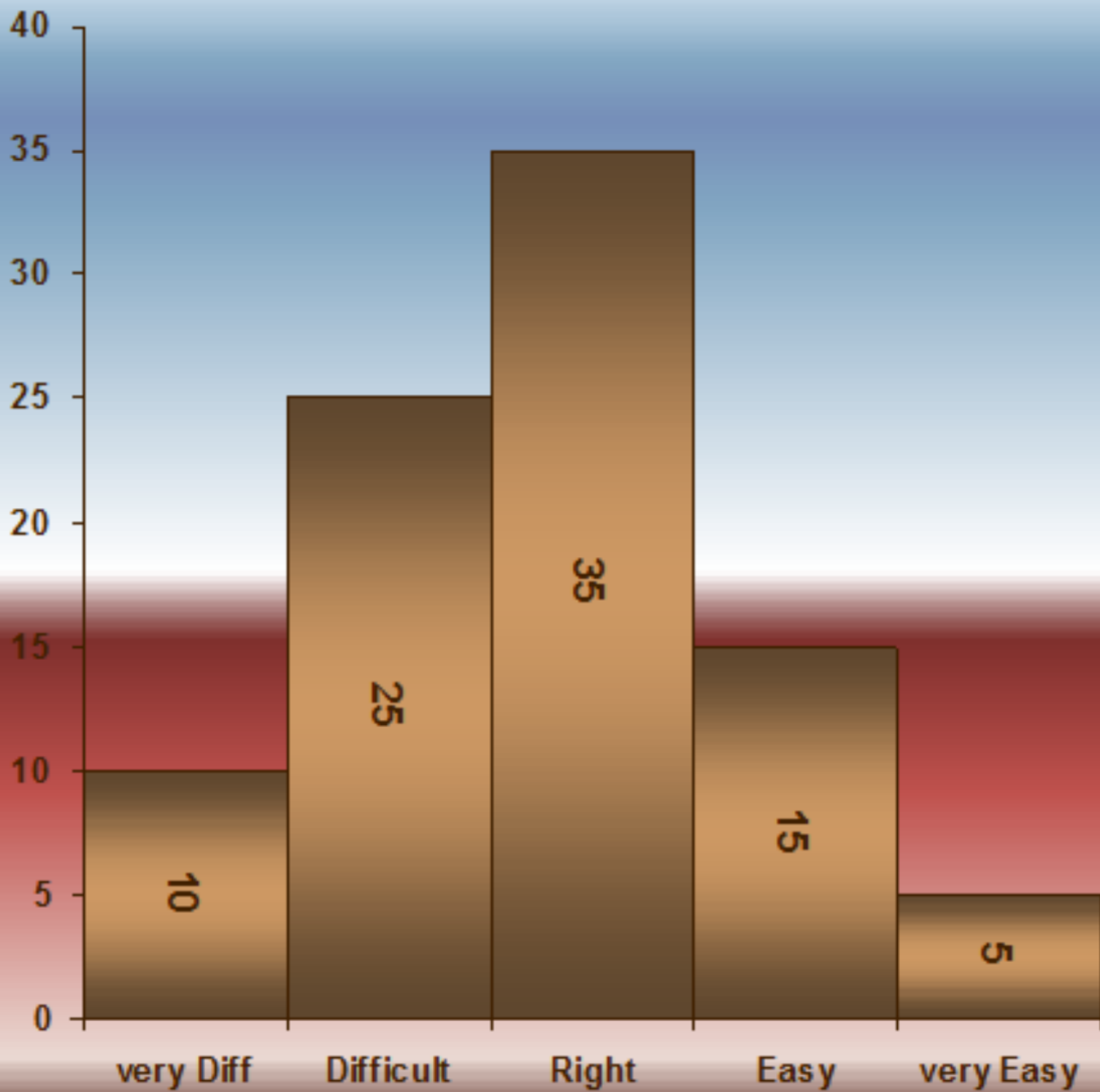
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# Interval Data

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- A constant unit of measure
- zero is arbitrarily defined

interstate mile markers: unit is miles, zero is West  
temperature: unit is degrees K,C,F; zero is ...  
calendar: unit is days, zero is the  
birth of Jesus



or discrete values.

A constant unit of measurement  
zero is arbitrarily defined

interstate mile markers:	unit is miles, zero is West
temperature:	unit is degrees K,C,F; zero is ...
calendar:	unit is days, zero is the birth of Jesus

# Ratio Data

same as Interval Data plus

- zero is absolutely defined

Checking balance:

unit is dollars, zero is bad news

Credit hours passed:

unit is credit hours, zero is...

Gas tank:

unit is gallons; zero is time to walk

same as Interval Data plus

- zero is absolutely defined

Checking balance:

unit is dollars, zero is bad news

Credit hours passed:

unit is credit hours, zero is...

Gas tank:

unit is gallons; zero is time to walk