Data 301 Data Analytics
Name of Lecture

Dr. Irene Vrbik

University of British Columbia Okanagan
irene.vrbik@ubc.ca

Term 1, 2018

Introduction

Things in a Bulleted List

Introduction

Things in a Bulleted List

- Bullets that

Introduction

Things in a Bulleted List

- Bullets that
- Come up

Introduction

Things in a Bulleted List

- Bullets that
- Come up
- One by one

Theorem

There are infinitely many primes.

This has many ramifications:

Theorem

There are infinitely many primes.

This has many ramifications:

Corollary

Corollary 1

Theorem

There are infinitely many primes.

This has many ramifications:

Corollary

Corollary 2

Theorem

There are infinitely many primes.

This has many ramifications:

Corollary

Corollary 3

Keybarod

Ctrl +Shift +ENTER

This is how we will refer to cells by index **A4**

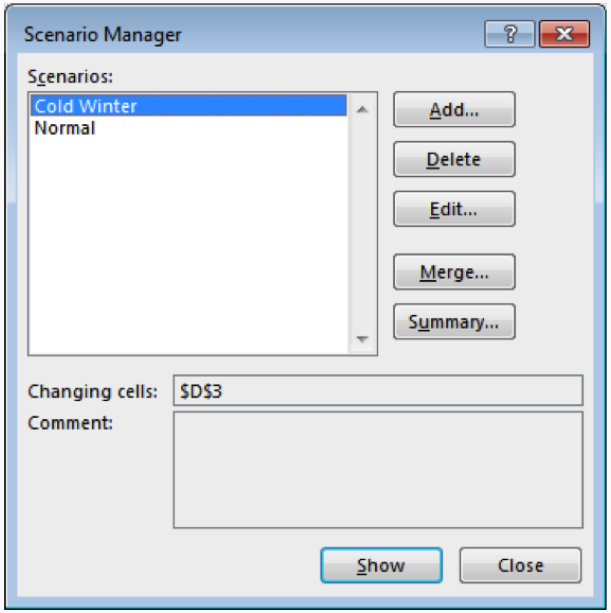
Left Part

Right Part

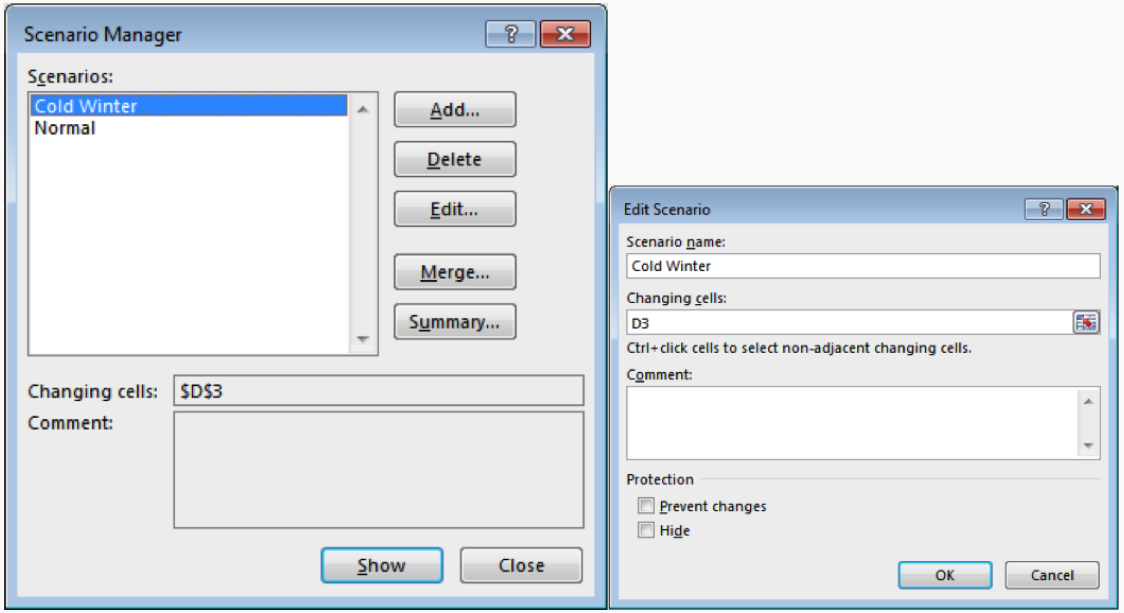
Outils

Outils

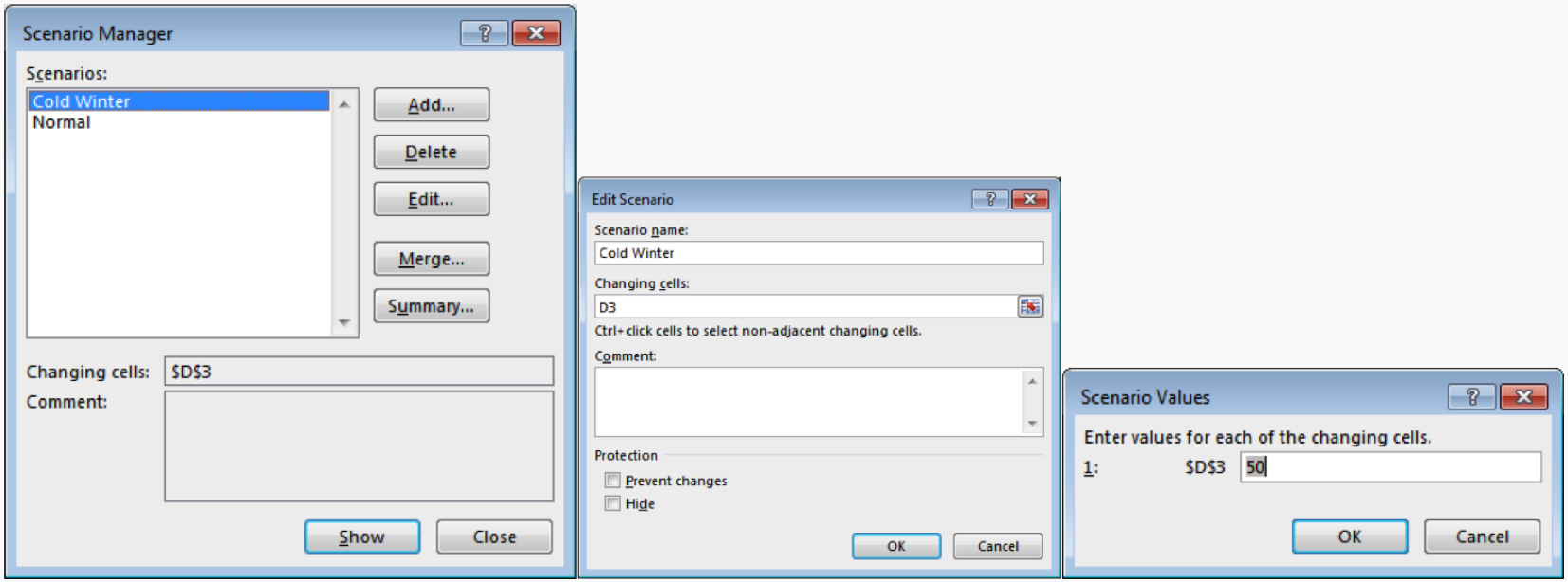
Outils


Scenario Manager
Scenarios:
Cold Winter
Normal
Add...
Delete
Edit...
Merge...
Summary...
Changing cells:
$D$3
Comment:
Show
Close

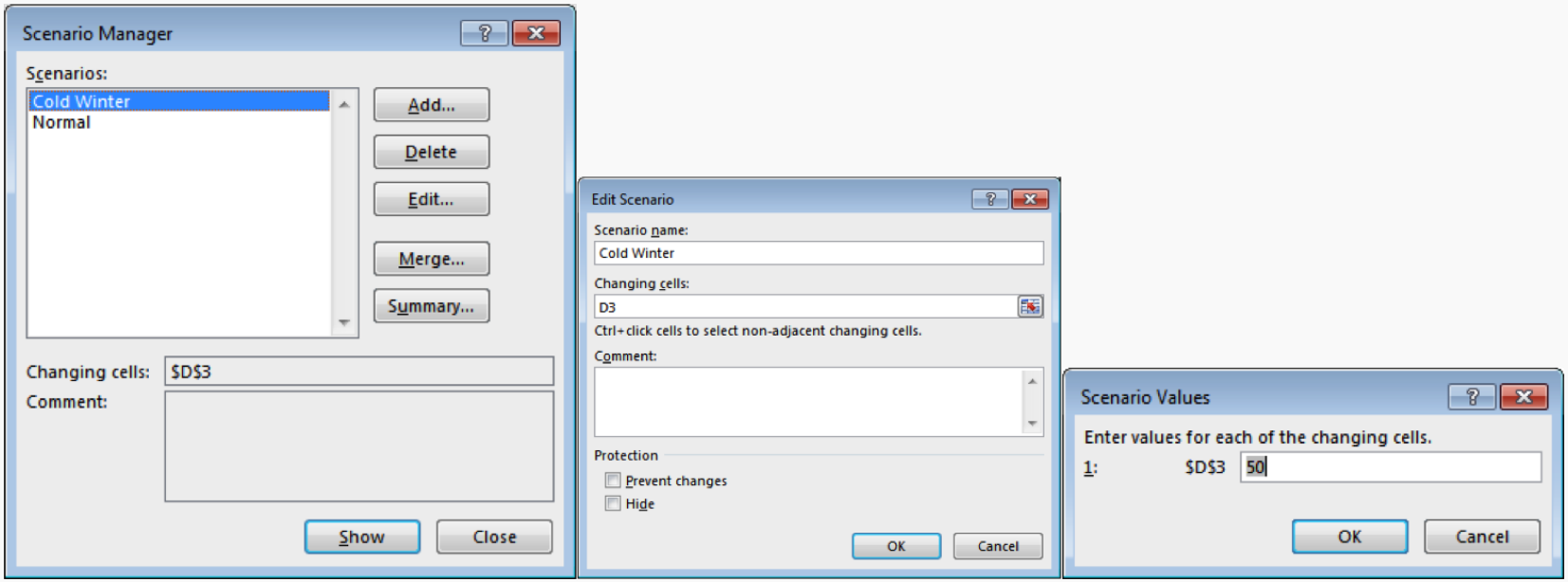
Outils


Scenario Manager
Scenarios:
Cold Winter
Normal
Add...
Delete
Edit...
Merge...
Summary...
Changing cells:
$D$3
Comment:
Show
Close
Edit Scenario
Scenario name:
Cold Winter
Changing cells:
D3
Ctrl+click cells to select non-adjacent changing cells.
Comment:
Protection
Prevent changes
Hide
OK
Cancel

Outils


Scenario Manager
Scenarios:
Cold Winter
Normal
Add...
Delete
Edit...
Merge...
Summary...
Changing cells:
$D$3
Comment:
Show
Close
Edit Scenario
Scenario name:
Cold Winter
Changing cells:
D3
Ctrl+click cells to select non-adjacent changing cells.
Comment:
Protection
Prevent changes
Hide
OK
Cancel
Scenario Values
Enter values for each of the changing cells.
1:
$D$3
50
OK
Cancel

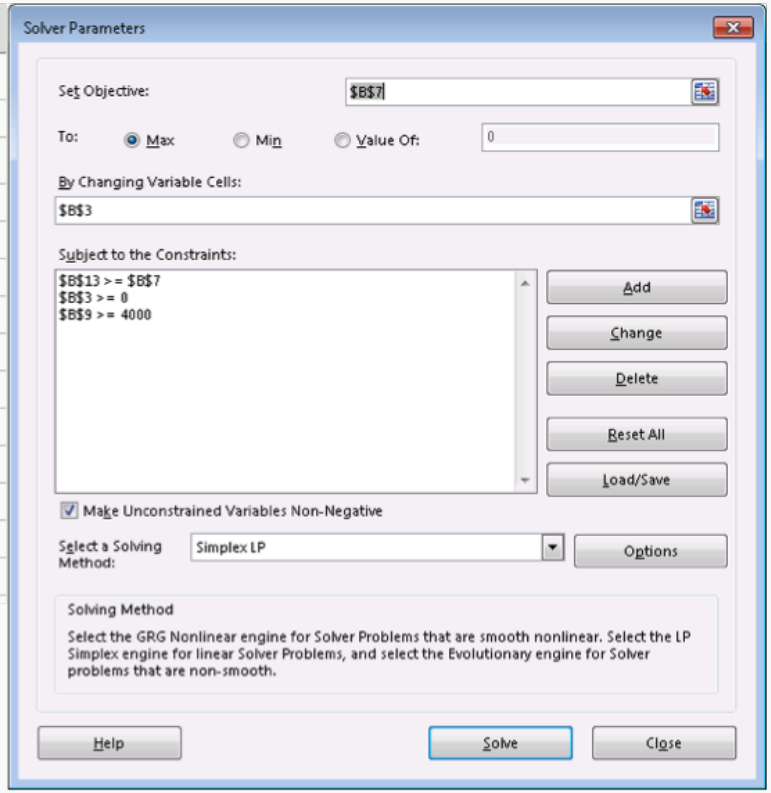
Outils

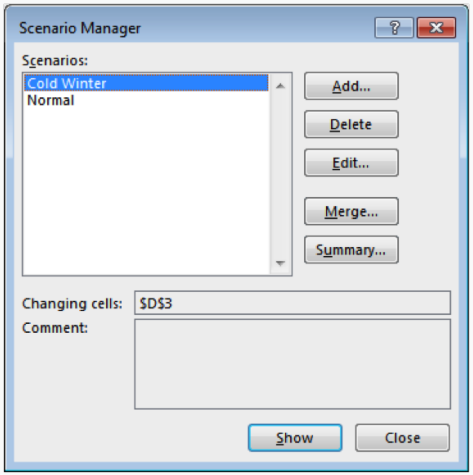

Scenario Manager
Scenarios:
Cold Winter
Normal
Add...
Delete
Edit...
Merge...
Summary...
Changing cells:
$D$3
Comment:
Show
Close
Edit Scenario
Scenario name:
Cold Winter
Changing cells:
D3
Ctrl+click cells to select non-adjacent changing cells.
Comment:
Protection
Prevent changes
Hide
OK
Cancel
Scenario Values
Enter values for each of the changing cells.
1:
$D$3
50
OK
Cancel

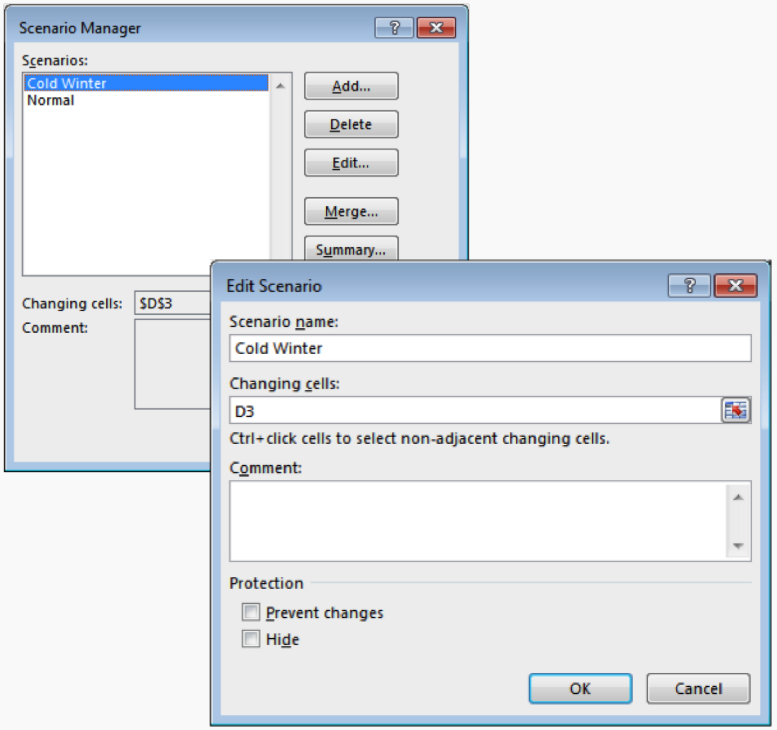
valign=t

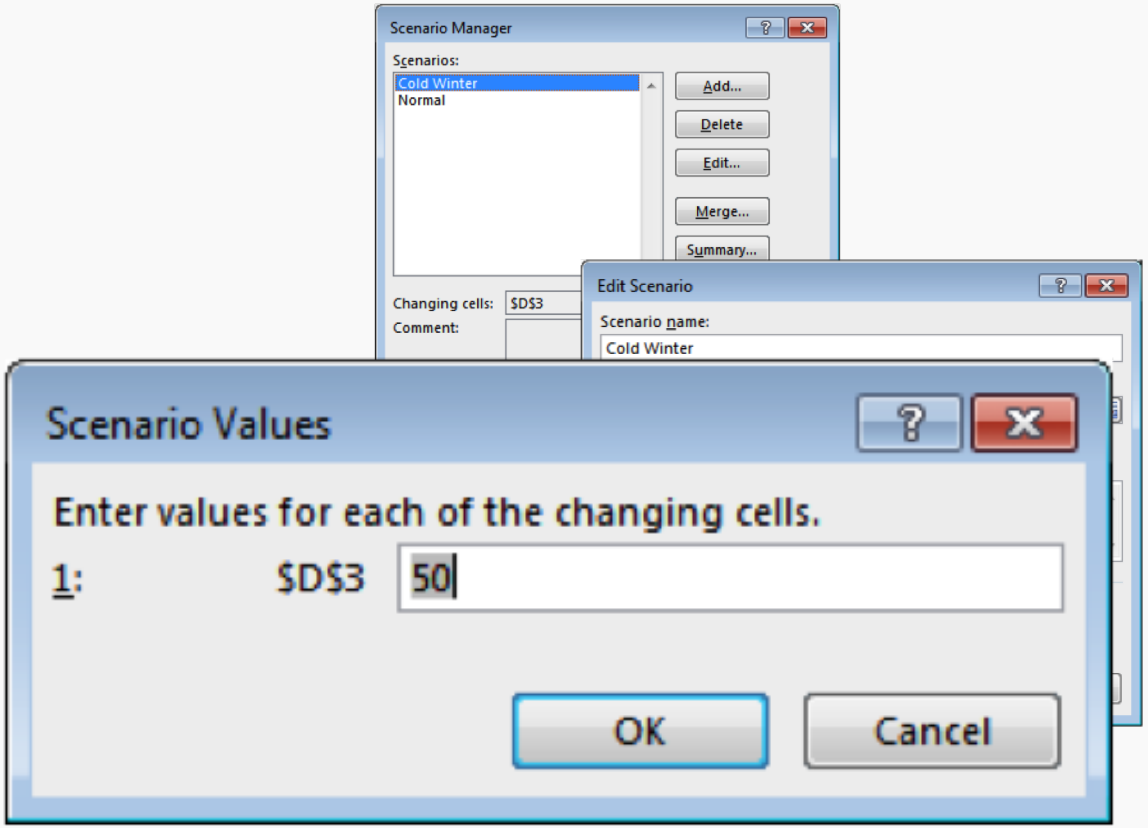
Align images at the top with
`\includegraphics[height=.45\textheight,valign=t]{Linear1}`

	A	B
1	**Solver Example: Maximum House You Can Afford**	
2		
3	**House Value:**	**$ 500,000.00**
4	**Down payment:**	$ 20,000.00
5	**Mortgage amount:**	$ 480,000.00
6	**Amoritization in years:**	25
7	**Monthly mortgage expense:**	**$2,533.62**
8		
9	**Monthly income:**	$ 5,000.00
10	**Mortgage rate:**	4%
11		
12	**Maximum mortgage expense percentage:**	30%
13	**Maximum mortgage expense amount:**	$ 1,500.00
14		$1,033.62




Scenario Manager
Scenarios:
Cold Winter
Normal
Add...
Delete
Edit...
Merge...
Summary...
Changing cells:
$D$3
Comment:
Show
Close


Scenario Manager
Scenarios:
Cold Winter
Normal
Add...
Delete
Edit...
Merge...
Summary...
Changing cells:
$D$3
Comment:
Edit Scenario
Scenario name:
Cold Winter
Changing cells:
D3
Ctrl+click cells to select non-adjacent changing cells.
Comment:
Protection
Prevent changes
Hide
OK
Cancel


Scenario Manager
Scenarios:
Cold Winter
Normal
Add...
Delete
Edit...
Merge...
Summary...
Changing cells:
$D$3
Comment:
Edit Scenario
Scenario name:
Cold Winter
Scenario Values
Enter values for each of the changing cells.
1:
$D$3
50
OK
Cancel

Outils

Whatever

Outils

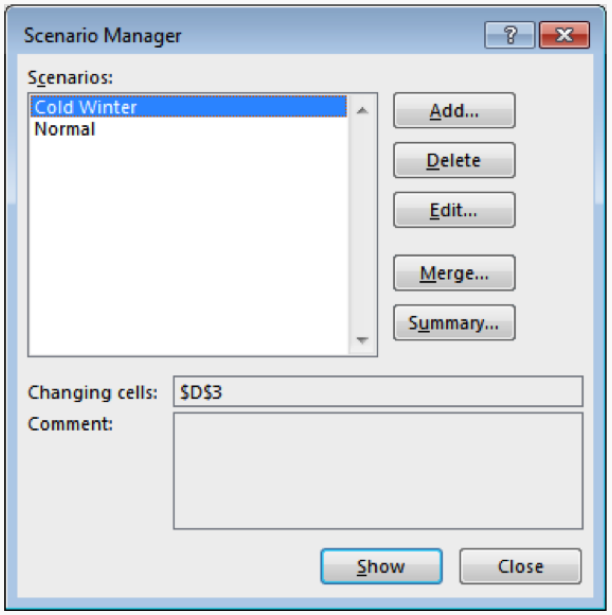
Whatever

- items

Outils

Whatever

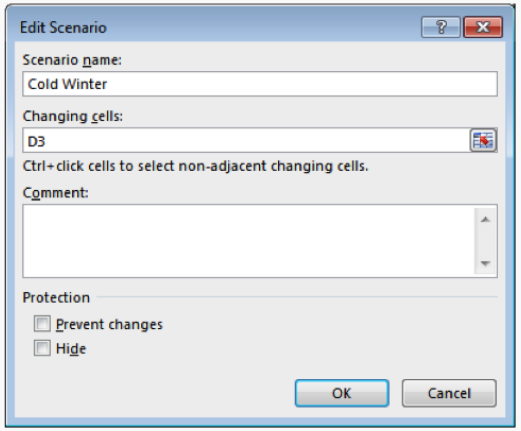
- items



Outils

Whatever

- items



Outils

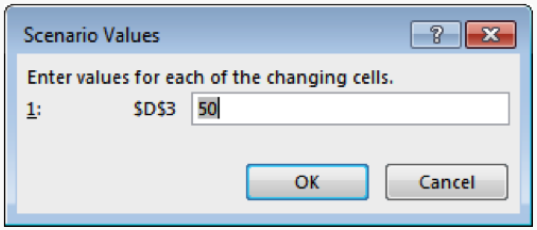
Whatever

- items
- go here

Outils

Whatever

- items
- go here



Outils

Whatever

- items
- go here

Scores

Outils

Whatever

- items
- go here

Scores

- CRPS et MAE

Outils

Whatever

- items
- go here

Scores

- CRPS et MAE
- Diagramme de Talagrand

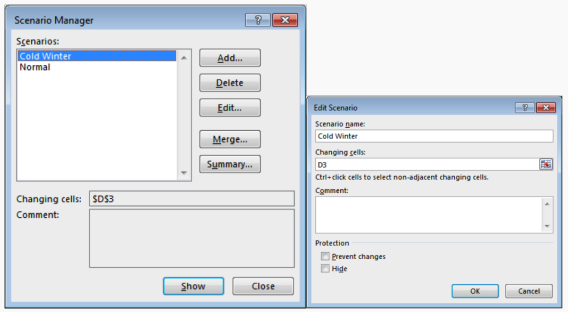
Outils

Whatever

- items
- go here

Scores

- CRPS et MAE
- Diagramme de Talagrand



Outils

Whatever

- items
- go here

Scores

- CRPS et MAE
- Diagramme de Talagrand
- Diagramme de fiabilit

1. a
2. b
3. c
4. d
5. e
6. f

Hints:

A James Madison

Hints:
James Madison ate broccoli.

A James Madison

B Harry Truman

Hints:
James Madison ate broccoli.
Harry Truman drank milk.

A James Madison

B Harry Truman

C Abraham Lincoln

Hints:
James Madison ate broccoli.
Harry Truman drank milk.
Abe Lincoln raised bees.

A James Madison

B Harry Truman

C Abraham Lincoln

D Calvin Coolidge

Hints:
James Madison ate broccoli.
Harry Truman drank milk.
Abe Lincoln raised bees.
And Cal Coolidge grew silk.

C Abraham Lincoln

Advanced Spreadsheet Addressing

You can three different ways you can specify an absolute address

- By row eg. =B$1
- By column eg. =$B1
- By cell (row and column) eg. =$B$1

Question: How would the formula =$A2+B$3 in cell **D3** be changed when copied to **E5**?

Advanced Spreadsheet Addressing

You can three different ways you can specify an absolute address

- By row eg. =B$1
- By column eg. =$B1
- By cell (row and column) eg. =$B$1

Question: How would the formula =$A2+B$3 in cell **D3** be changed when copied to **E5**?

D3 to **E5**: $\rightarrow$ one column, $\downarrow$ two rows

Advanced Spreadsheet Addressing

You can three different ways you can specify an absolute address

- By row eg. =B$1
- By column eg. =$B1
- By cell (row and column) eg. =$B$1

Question: How would the formula =$A2+B$3 in cell **D3** be changed when copied to **E5**?

D3 to **E5**: $\rightarrow$ one column, $\downarrow$ two rows

- $A2: + ~~$\rightarrow$ one column~~, $\downarrow$ two rows = $A4

Advanced Spreadsheet Addressing

You can three different ways you can specify an absolute address

- By row eg. =B$1
- By column eg. =$B1
- By cell (row and column) eg. =$B$1

Question: How would the formula =$A2+B$3 in cell **D3** be changed when copied to **E5**?

D3 to **E5**: $\rightarrow$ one column, $\downarrow$ two rows

- $A2: + ~~$\rightarrow$ one column~~, $\downarrow$ two rows = $A4
- B$3: + $\rightarrow$ one column, + ~~$\downarrow$ two rows~~ = C$3

Advanced Spreadsheet Addressing

You can three different ways you can specify an absolute address

- By row eg. =B$1
- By column eg. =$B1
- By cell (row and column) eg. =$B$1

Question: How would the formula =$A2+B$3 in cell **D3** be changed when copied to **E5**?

D3 to **E5**: $\rightarrow$ one column, $\downarrow$ two rows

- $A2: + ~~$\rightarrow$ one column~~, $\downarrow$ two rows = $A4
- B$3: + $\rightarrow$ one column, + ~~$\downarrow$ two rows~~ = C$3

Answer: The copied formula would appear as =$A4+C$3 in cell **E5**

$$y = \frac{(x^2+1)\sqrt{x+3}}{x-1}$$

$$\ln y = \ln(x^2+1) + \frac{1}{2}\ln(x+3) - \ln(x-1)$$

$$\frac{1}{y}\frac{dy}{dx} = \frac{2x}{x^2+1} + \frac{1}{2(x+3)} - \frac{1}{x-1}$$

So

$$\frac{dy}{dx} = \left(\frac{2x}{x^2+1} + \frac{1}{2(x+3)} - \frac{1}{x-1}\right) y$$

$$y = \frac{(x^2+1)\sqrt{x+3}}{x-1}$$

$$\ln y = \ln(x^2+1) + \frac{1}{2}\ln(x+3) - \ln(x-1)$$

$$\frac{1}{y}\frac{dy}{dx} = \frac{2x}{x^2+1} + \frac{1}{2(x+3)} - \frac{1}{x-1}$$

So

$$\frac{dy}{dx} = \left(\frac{2x}{x^2+1} + \frac{1}{2(x+3)} - \frac{1}{x-1}\right)\frac{(x^2+1)\sqrt{x+3}}{x-1}$$

Example

PlaceQuestionHere

1. Option1
2. Option2
3. Option3
4. Option4

A) 0 **B)** 1 **C)** 2 **D)** 3 **E)** 4

Answer:

PlaceQuestionHere

1. Option1
2. Option2
3. Option3
4. Option4

A) 0 B) 1 C) 2 D) 3 E) 4

Answer:

PlaceQuestionHere

1. Option1
2. Option2
3. Option3
4. Option4

A) 0 B) 1 C) 2 D) 3 E) 4

Answer:

PlaceQuestionHere

1. Option1
2. Option2
3. Option3
4. Option4

A) 0 B) 1 C) 2 D) 3 E) 4

Answer:

PlaceQuestionHere

1. Option1
2. Option2
3. Option3
4. Option4

A) 0 B) 1 C) 2 D) 3 E) 4

Answer:

PlaceQuestionHere

1. Option1
2. Option2
3. Option3
4. Option4

A) 0 B) 1 C) 2 D) *3* E) 4

Aggregate Functions Question

Answer:

Assume the cells in the range `A1:C4` each contain a number that is equal to their row number (e.g. B3 contains 3). How many of the following statements are TRUE?

1. The number of cells in the range is 12.
2. The value of `SUM(A1:C4)` is 20.
3. The value of `COUNTIF(A1:B4,">2")` is 4.
4. `AVERAGE(A1:C4) > MAX(C2:C3)`

A) 0 B) 1 C) 2 D) 3 E) 4

Aggregate Functions Question

Answer:

Assume the cells in the range `A1:C4` each contain a number that is equal to their row number (e.g. B3 contains 3). How many of the following statements are TRUE?

1. The number of cells in the range is 12.
2. The value of `SUM(A1:C4)` is 20.
3. The value of `COUNTIF(A1:B4,">2")` is 4.
4. `AVERAGE(A1:C4) > MAX(C2:C3)`

A) 0 B) 1 C) 2 D) 3 E) 4

Aggregate Functions Question

Answer:

Assume the cells in the range `A1:C4` each contain a number that is equal to their row number (e.g. B3 contains 3). How many of the following statements are TRUE?

1. The number of cells in the range is 12.
2. The value of `SUM(A1:C4)` is 20.
3. The value of `COUNTIF(A1:B4,">2")` is 4.
4. `AVERAGE(A1:C4) > MAX(C2:C3)`

A) 0 B) 1 C) 2 D) 3 E) 4

Aggregate Functions Question

Answer:

Assume the cells in the range `A1:C4` each contain a number that is equal to their row number (e.g. B3 contains 3). How many of the following statements are TRUE?

1. The number of cells in the range is 12.
2. The value of `SUM(A1:C4)` is 20.
3. The value of `COUNTIF(A1:B4,">2")` is 4.
4. `AVERAGE(A1:C4) > MAX(C2:C3)`

A) 0 B) 1 C) 2 D) 3 E) 4

Aggregate Functions Question

Answer:

Assume the cells in the range `A1:C4` each contain a number that is equal to their row number (e.g. B3 contains 3). How many of the following statements are TRUE?

1. The number of cells in the range is 12.
2. The value of `SUM(A1:C4)` is 20.
3. The value of `COUNTIF(A1:B4,">2")` is 4.
4. `AVERAGE(A1:C4) > MAX(C2:C3)`

A) 0 B) 1 C) 2 D) 3 E) 4

Aggregate Functions Question

Answer:

Assume the cells in the range `A1:C4` each contain a number that is equal to their row number (e.g. B3 contains 3). How many of the following statements are TRUE?

1. The number of cells in the range is 12.
2. The value of `SUM(A1:C4)` is 20.
3. The value of `COUNTIF(A1:B4,">2")` is 4.
4. `AVERAGE(A1:C4) > MAX(C2:C3)`

A) 0 B) 1 C) 2 D) *3* E) 4

Question:

Is the answer yes or no? yes B) no

Question:

Is the answer yes or no? yes B) no

Question:

Is the answer yes or no? yes B) no

This answer (which appears in the form of coloured text) will only appear on beamer slides but NOT the handout. Put a double pause in order to get a slide with JUST the colour change

Equations

Equations are easy

- Just copy/paste equations

Equations

Equations are easy

- Just copy/paste equations
- From the paper!

$$\mathbf{p}^* = \underset{\mathbf{p}}{\operatorname{argmin}} \sum_{\mathbf{x}} [I(\mathbf{W}(\mathbf{x};\mathbf{p})) - T(\mathbf{x})]^2$$

A Movie

Some block

- Movies only seem to work in Adobe Reader
- Movie file is not embedded, it must be on the computer

Some more block

Movies only seem to work in Adobe Reader
Movie file is not embedded, it must be on the computer

Some text in here.

- Movies only seem to work in Adobe Reader
- Movie file is not embedded, it must be on the computer

This frame won't be included in the handout mode

We need "fragile" frame to use verbatim `see()`# This is how we do lettered lists:

A) 0

B) 1

C) 2

D) *3*

E) 4

- no space
- between bullets

- be sure
- to set back
- to 5pt sep

Credits

- Brought to you by Cédric Mauclair
- Please let me know about improvements!
- inspiration: `http://www.shawnlankton.com`... (in code)

Questions