

## v2020.0903

Click **Replace All** toward the lower left of the form. After all replacements were made on the **TeacherQuestions** worksheet, *Excel* confirms with a message box “All done. We made 153 replacements.” Click **OK** to the confirmation but DO NOT CLOSE the **Replace** form. Instead, click at the bottom on the **Conceptual** tab that is right and adjacent to **TeacherQuestions**. After clicking on **Conceptual** the **Replace** form still is visible and valid so click **Replace All**. *Excel* hopefully confirms 816 replacements made to formulas on the worksheet named **Conceptual**. Click **OK**. Now go rightward and click

on the **FA1** worksheet tab. The **Replace** form still is visible and valid so click **Replace All**, click **OK** after 732 replacements were made. Click on the **LumpSum** tab, click **Replace All**, confirm **OK**. Then click the adjacent **GeneralIPV** tab, click **Replace All**, click **OK**. Click the adjacent **CapBud** tab, click **Replace All**, click **OK**. Continue to make the replacements on all the worksheets. When finished with the last one (named **Intntnl**) then click **OK** to confirm the replacements and click **Close** on the **Replace** form. *If and only if* the two required *Excel* add-ins loaded properly then **Save** the file. Here is a small digression that demonstrates how an algorithmic question can present an endless stream of unique views for the same underlying question. The **INTNTL** worksheet displays as below.

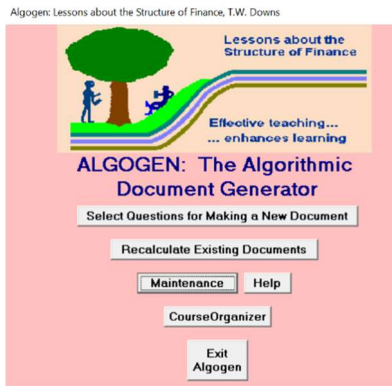
A	B	C	D	E	F	G	H	I	J	K	L	M	N
119													
120	Multiple setup (CR2m)												
121	Original conditions												
122	peso	numerate											
123	bhat	FC1											
124	ruble	FC2											
125	0.80	price of FC1											
126	9.92	price of FC2											
127	0.71	cross-price of FC1 relative to FC2	correct										
128	1.40	cross-price of FC2 relative to FC1	wrong										
129	0.80	wrong											
130													
131	peso	0.80											
132													
133													
134	A	CR2am Triangle arbitrage, find equilibrium exchange rate											
135		the price for one bhat probably is 0.71 ruble											
136		the price for one ruble probably is 0.71 bhat											
137		the price for one bhat probably is 1.4 ruble											
138		the price for one bhat probably is 0.8 ruble											
139		the price for one ruble probably is 0.8 bhat											
140													

Cell **B134** above displays the letter **A**. That's the answer to question **CR2am** which, as cell **B133** shows, is a question on currency triangle arbitrage. The question relies on the data in the range **A121:D131** which links to a *Word* document containing a paragraph scenario for this question. In cell **G34** is the answer for a different question, **CR2bm**, is **C**. On a test you could put either one or both of these questions. If both are used, there is a common scenario setup followed by the two questions. These two questions are complements, not substitutes, and using both enables a more in-depth test for the student's understanding of the topic. The latter question includes a little bit more information from the range **J123:L131** on currency appreciation and depreciation. Click on **Recalculate** that appears at the bottom left of the *Excel* window (or hit the **F9** key) giving a new view of these two question setups appearing like below.

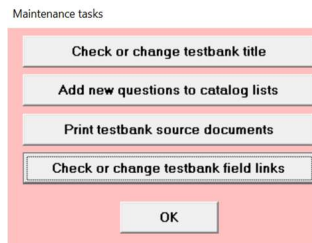
A	B	C	D	E	F	G	H	I	J	K	L	M	N
119													
120	Multiple setup (CR2m)												
121	Original conditions												
122	ruble	numerate											
123	krona	FC1											
124	ruble	FC2											
125	6.30	price of FC1											
126	4.53	price of FC2											
127	1.39	cross-price of FC1 relative to FC2	correct										
128	0.72	cross-price of FC2 relative to FC1	wrong										
129	1.26	wrong											
130													
131	ruble	6.30											
132													
133													
134	E	CR2am Triangle arbitrage, find equilibrium exchange rate											
135		the price for one krona probably is 0.72 ruble											
136		the price for one ruble probably is 1.28 krona											
137		the price for one krona probably is 1.26 ruble											
138		the price for one ruble probably is 1.39 krona											
139		the price for one krona probably is 1.39 ruble											
140													

The answers for this view have changed to **E** for **CR2am** and **A** for **CR2bm**. More significantly, all the numbers and several words have changed (e.g., bhat instead of ruble, depreciate instead of appreciate). When the question scenario updates in *Word* with the new data the questions appear so differently that students sitting side by side gain no advantage by looking at neighboring papers (or neighboring computers if it's an online lab; or as a second attempt if it's multiple attempt online algorithmic assessment)! **Save** the file and exit *Excel*.

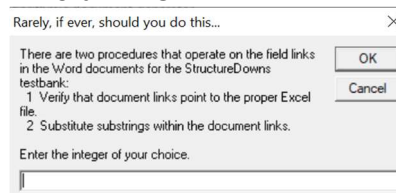
2. This step puts your username in the *Word* documents that got extracted from **Algogen.zip**. Right click on the Windows **Start** button, select **Run**, then browse to **C:\Users\your username\Documents\Algogen.exe** and hit **Enter**. The main *Algogen* form shown below pops up.



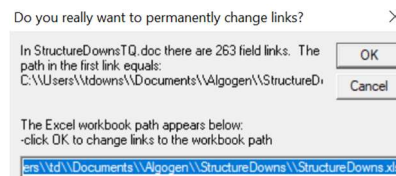
Click the **Maintenance** button on the form above and see the form below:



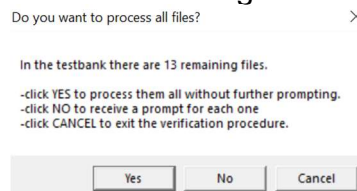
Click **Check or change testbank field links** and see:



On the form above type in the number **1** and click **OK**. The form below pops-up.

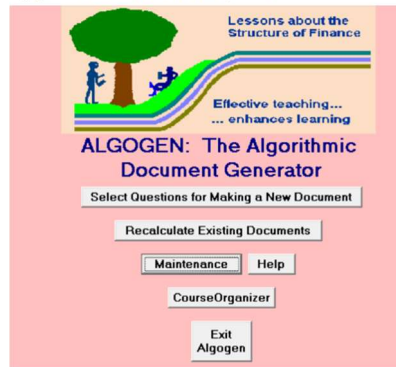


Click **OK** to replace the link already in the document with your actual username. Your actual username should appear in blue. Clicking **OK** shows the form below.



Click **Yes** to process all 13 of the remaining question files, click **OK**. And **Exit**.

3. This last step verifies that properly functioning. Right click on the Windows **Start** button, select **Run**, then browse to **C:\Users\your username\Documents\Algogen.exe** hopefully see.



Click the top button, **Select Questions**, and the form below displays.

Choose the method for selecting questions

Click on one of the buttons below to select the method for choosing questions

**Method 1: View lists of question descriptions and put checkmarks besides questions to put on your new document**

**Method 2: Enter known question codes to put those questions on your new document**

Cancel

Click **Method 1** and the form below populates with content from the collection.

Select questions from Lessons about the Structure of Finance, T.W. Downs

Part TQ Problems created by your teacher--2  
Part FF Finance fundamentals and definitions (verbal questions)--2  
Part BS Backdrop and institutional setting (verbal questions)--3  
Part TR Theoretical finance relationships (verbal questions)--4  
Part MB Market behavior and measures (verbal questions)--5  
Part MS Miscellaneous verbal questions--6  
Part FA Statement fundamentals--7

Step 1: Click desired part above

Up  
Down  
Remove

Question List

#

Step 2: Check desired questions above and click here Preview 1 question

Step 3: Click here to make new document with questions on list

Cancel

Click **Part FA Statement fundamentals**. The empty white box above Step 2 populates with bunches of question codes and brief descriptions. Check the box for 2 of them, say **FA9** and **FA14**:

Select questions from Lessons about the Structure of Finance, T.W. Downs

Part TQ Problems created by your teacher--2  
Part FF Finance fundamentals and definitions (verbal questions)--2  
Part BS Backdrop and institutional setting (verbal questions)--3  
Part TR Theoretical finance relationships (verbal questions)--4  
Part MB Market behavior and measures (verbal questions)--5  
Part MS Miscellaneous verbal questions--6  
Part FA Statement fundamentals--7

Step 1: Click desired part above

Up  
Down  
Remove

Question List

#

Step 2: Check desired questions above and click here Preview 1 question

Step 3: Click here to make new document with questions on list

Cancel

☐ FA1 Find change in net working capital and whether a source or use --144  
☐ FA2 Find whether change is a source or a use --145  
☒ FA9 Find OR(net income, total assets) given sales and ratios --146  
☐ FA12 Find net income given income statement items --147  
☐ FA8 Find p/e given net income, shareprice, and #shares --148  
☐ FA10 Find change in market cap for simplest setting --149  
☒ FA14 Find change in stock price from last year given for etc --150  
☐ FA19 Find shareholder's ROR given P(-1), div(0), and P(0) --151

Click **Step 2** and see the codes copy onto the **Question List** toward the right. Next click **Step 3**. The form below pops-up.

Specify document name, number of versions, etc...

Step 1: Type the new document's name here. For example, type exam1 to create a file with name "exam1.doc"

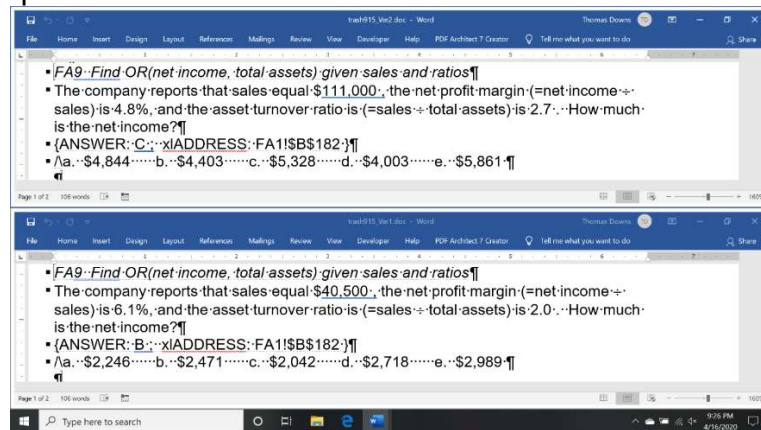
Step 2: To change where the new document is saved, double-click to the new directory

Step 3: Check whether you want to enter header information on your document now.

Step 4: Indicate how many documents you want. Each document automatically chooses new settings or numbers. A selection of zero makes one document with exactly the same numbers or setting as the master document files.

Cancel Advanced Settings ... Make Document

For the **Step 1** box, type in a filename for the output. A handy name for files that you won't mind deleting is **trashxxx** where **xxx** is the time your computer shows at the bottom right, like **trash915**. Increment the **Step 4** indicator to **2** (steps 2 and 3 are fine as is). Click **Make Document**. The procedure should halt normally and return to the main menu. **Exit Algogen**. Proceed to open the 2 files that were made in the ...**\Documents\Algogen\UserDocuments** folder, **trash915\_Ver1.doc** and **trash915\_Ver2.doc**. Inspect the two documents to make sure, like the two shown below, that they look unique and error free!



The uppermost line with the question identification code and description plus the line after the question body showing the answer are formatted as hidden text. Formatting text as hidden is analogous to formatting as, say, bold. The display of hidden text on the screen is toggled by the **Tools > Options > View > Hidden** setting (or the ¶ symbol on the **Home** menu). The **Word Print** Options determine whether the hidden text prints. In the two versions above all numbers differ. The description indicates, too, that one view might ask how much is net income whereas the next view might ask how much is total assets. A student could be viewing different versions in order to practice and learn. Alternatively, maybe the viewing occurs on an assessment in which case adjacent students have different views of the same scenario setup. They are being tested on the same learning outcome, however. Furthermore, the advantage of perusing neighboring papers has been reduced significantly.

The algorithmic documents from the 12 chapter *Elements of Finance* collection includes 14 Microsoft *Word* files with about 600 unique questions created in accordance with one of 8 algorithms. The relation between each source document and relevant location in the book is close but not identical. Most non-numerical question scenario setups all are in one document regardless of the chapter, class discussion, or event that motivated

creating the question scenario setup. The 14 source files map into chapters of *Elements* as follows:

1. ElementsOfFinanceTQ.doc = About 2 dozen questions from throughout the book; this is the file that receives any new problems added to *Algogen* through the front door procedure. *Part codes*: TQ.
2. Backdrop.doc = About 120 verbal questions pertinent to topics throughout the textbook. These are non-computational problems. *Part codes*: BS, FF, TR, MB, and MS
3. FinAct.doc = Financial accounting, chapter 2. *Part codes*: FA and BE
4. Growth.doc = Accounting for growth, chapter 3. *Part codes*: BA, GR, and EFN
5. CashFlows.doc = More accounting problems, chapters 2 & 3. *Part codes*: CF
6. PVFV.doc = Lump-sum time value problems, chapter 4. *Part codes*: ROR, LS, CY, and MC
7. Annuities.doc = Chapter 5. *Part codes*: FV, PV, AM, and TS
8. CapB.doc = Capital budgeting, chapter 6. *Part codes*: CB
9. BondV.doc = Bond valuation, chapter 7. *Part codes*: BD
10. StockVal.doc = Stock valuation, chapter 8. *Part codes*: TK, ST, and SV
11. Port.doc = Portfolio and asset pricing problems, chapters 10 & 11. *Part codes*: ER, MR, AP, AR, and CC
12. RiskMgt1.doc = Mostly futures problems, chapter 12. *Part codes*: FT
13. RiskMgt2.doc = Mostly option problems, chapter 12. *Part codes*: DS
14. InterN.doc = Triangle arbitrage, currency, and parity problems, chapter 12. *Part codes*: CR and PR

*Algogen* uses the file below to maintain or update the above information.

**C:\Users\your username\Documents\Algogen\elementsOfFinance\elementsOfFinance.ini**