

**NATIONAL
SENIOR CERTIFICATE**

GRADE 12

SEPTEMBER 2016

COMPUTER APPLICATIONS TECHNOLOGY P1

MARKS: 180

TIME: 3 hours

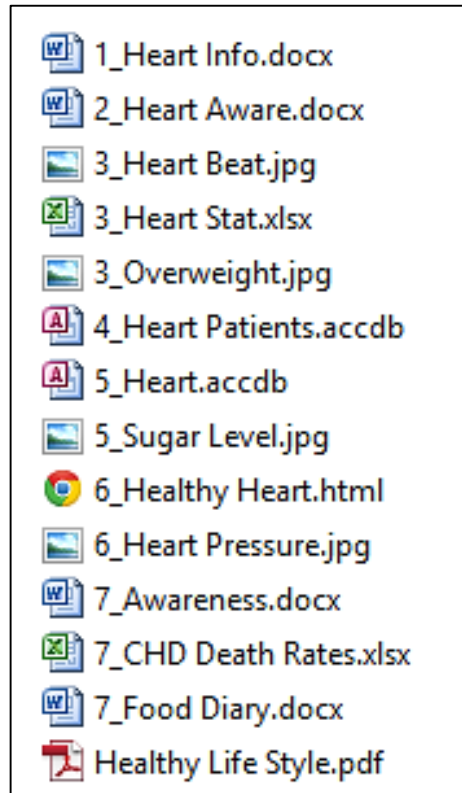


This question paper consists of 14 pages.

INSTRUCTIONS AND INFORMATION

1. Owing to the nature of this three-hour examination, it is important to note that you will NOT be permitted to leave the examination room before the end of the examination period.
2. The invigilator will give you a disk containing all the files needed for the examination OR you will be told where the files can be found on the network or computer. If a disk has been issued to you, you must write your centre number and examination number on the label. If you are working on the network, you must follow the instructions provided by the invigilator.
3. A copy of the master files will be available from the invigilator. Should there be any problems with a file, you may request another copy from the invigilator.
4. This question paper consists of SEVEN questions.
5. Answer ALL the questions.
6. Ensure that you save each document using the file name given in the question paper. Save your work at regular intervals as a precaution against possible power failures.
7. Read through each question before answering or solving the problem. Do NOT do more than required by the question.
8. At the end of the examination you must hand in the disk given to you by the invigilator with ALL the files saved on the disk, OR you should make sure that ALL the files are saved on the network/computer as explained to you by the invigilator/teacher. Make absolutely sure that all files can be read.
9. During the examination you may make use of the help functions of the programs which you are using. You may NOT use any other resource material.
10. If data is derived from a previous question that you cannot answer, you should still proceed with the questions that follow.
11. Unless instructed otherwise, you must use formulae and/or functions for ALL calculations in questions involving spreadsheets. Use absolute cell references only where necessary to ensure that formulae are correct when you copy them to other cells in a spreadsheet.
12. In all questions involving word processing, you should set the language to English (South Africa). The paper size is assumed to be A4 Portrait, unless instructed otherwise.
13. In Annexure A the HTML Tag sheet is provided.

14. The examination folder/data disk that you receive with this question paper will contain the folder and files listed below. Ensure that you have the folder and all the files before you begin this examination.



SCENARIO

Many people do not know when they are having a heart attack. Heart disease is one of the top three killers in South Africa, knowing the warning signs for a heart attack might just save your life or the lives of people close to you. The Heart and Stroke Foundation South Africa recommends that every member of the public has their heart health assessed. Are you going to wait and become a statistic? Or are you going to do something about it?



The school asked the Grade 12 learners to assist in a campaign to make people aware of the warnings and symptoms of a heart attack and also the prevention thereof.

QUESTION 1: WORD PROCESSING

A document is created to give background information on Heart Attack and its causes, symptoms and remedies.

Open the **1_Heart Info** word processing document.

- 1.1 This document has a cover page. Make the following changes to the cover page.
 - 1.1.1 Add a small caps effect to the abstract given on the cover page. (1)
 - 1.1.2 Add a soft edge rectangular picture style to the picture given on the cover page. (1)
- 1.2 Insert a 6pt paragraph spacing before and after for the whole document. (1)
- 1.3 Apply a condensed spacing of **1 pt** for the heading **"What Is Heart Attack..."** on page 3. (2)
- 1.4 Apply a formatting option for the highlighted word **9-1-1** on page 3 so that the three numbers and the hyphen (-) in between the numbers always stay together. (2)
- 1.5 The image displayed in page 3 needs a caption, namely **FIGURE A**. Place the caption above the image. (2)
- 1.6 Locate the highlighted text **"agreed"** on page 4.
 - Insert a footnote with any symbol to the text.
 - Ensure that the footnote reads **"Prescribed"**. (2)
- 1.7 Apply the **'Happy Heart'** style to the three paragraph headings shaded in green on page 6 of the document. (2)

- 1.8 Apply multilevel numbering to the paragraphs under the heading **'Heart Attack Symptoms'** mentioned on page 5 as shown below.

Symptoms of a heart attack include:

- 1) Discomfort, pressure, heaviness, or pain in the chest, arm, or below the breastbone
- 2) Discomfort radiating to the back, jaw, throat, or arm.
- 3) Other symptoms include
 - a) Fullness, indigestion, or choking feeling (may feel like heartburn)
 - b) Sweating, nausea, vomiting, or dizziness
 - c) Extreme weakness, anxiety, or shortness of breath
 - d) Rapid or irregular heartbeats
- 4) During a heart attack, symptoms last 30 minutes or longer and are not relieved by rest or nitroglycerin under the tongue.
- 5) Some people have a heart attack without having any symptoms (a "silent" myocardial infarction). A silent MI can occur in anyone, but it is more common among people with diabetes.

(3)

- 1.9 Edit the paragraphs (headings included) that start with **"How Are Future Heart..."** and end with **"...controlling stress"** on page 6.

- Place the three paragraphs in 3 columns with a line between.
- Space between columns must be exactly 0.5 cm.
- Ensure that the three paragraph headings will always appear on top of a column.

(4)

- 1.10 Edit the citation inserted on page 7 under the heading **'Citations'** so as to enter and update the name of the author as **"James Beckerman"**.

(2)

- 1.11 Change the document orientation of only the last page to landscape.

(1)

- 1.12 Insert the Table of Contents on the second page.

- Use a distinctive format.
- Use only the three styles namely **"Love Heart"**, **"Heart Care"** and **"Happy Heart"** in the Table of Contents.

(3)

- 1.13 Add automatic page numbering to the document as follows:

- Place a page numbers in the page footer in any format.
- Ensure that no page numbers appears on the first and the last page of the document.
- The page numbering should start from page 2 onwards. The second page should be numbered 1.

(5)

- 1.14 Set the left and bottom margins to **1.5 cm**.

(1)

[32]

QUESTION 2: WORD PROCESSING

A form is created in Word to collect some basic information about people's awareness about Heart diseases and the basic lifestyles of people.

Open the **2_Heart Aware** Word processing document.

- 2.1 Insert a text shading to the heading **"AM I AWARE..."** of any colour. (2)
- 2.2 Format the text form field for the heading **Surname** so that:
 - It can accommodate a maximum of 20 characters.
 - It should be in CAPTIAL letters. (2)
- 2.3 Edit the **Age** field so that:
 - The maximum length of the numbers is 2.
 - Add a help text so that it appears when (F1) key is pressed and reads **"Enter numbers between 20 and 70"**. (3)
- 2.4 Insert a check box form field for the **Male** and **Female** option. The check box size should be exactly 15pt. (2)
- 2.5 Locate the Drop-Down form field next to the heading **Your main factor of concern:**
 - Add the option **Smoking** to be included in the existing list. (1)
 - The **Smoking** option should be at the top of the list. (1)
- 2.6 The five major causes of heart attacks are revealed in the form of an AutoShape as shown in the figure. Please do the following changes to the shapes:
 - Group the shapes for **Smoking** and **Fatty Diet** so that they are grouped as a single object with the rest of the shapes. (2)
- 2.7 Set and apply a 10 cm right aligned dashed leader tab for 4 lines (one line after the other) after the heading **"Please tell us about your daily life style"**. (2)
- 2.8 An **equation** for finding the Body Mass Index (BMI) has to be inserted in the shaded region under the heading **Calculate your BMI (Body Mass Index) here:**
Insert the following formula in the space provided:

$$\text{Body Mass Index} = \frac{\text{Weight}}{\text{Height}^2}$$

(3)
[18]

QUESTION 3: SPREADSHEET

The statistical report for a heart related study conducted at *Life Possible Mission Hospital* is stored in the **3Heart_Stat** spreadsheet.

Open the **3_Heart Stat** spreadsheet and work in the **Patient Details** worksheet.

- 3.1 A value, attempting to display the current time, appears in **cell O1**.
Replace this value with a function that will automatically display the current time only. (1)
- 3.2 Merge and centre the cells **A1** to **L1**. (1)
- 3.3 Insert the image **3_Heart Beat.jpg** in cell **A2** with height of **1 cm** and width to **15 cm**. (3)
- 3.4 Use suitable text functions to create a patient code in cell **A5**.
The code is created by combining the following:
- First letter from the name
 - Followed by the length of the surname
 - The age of the patient
- Example: The patient code for 'Carl Raymond' will be **C725**. (6)
- 3.5 Insert a function in cell **I5** to determine the Body Mass Index of the patient which is calculated as follows:
- Weight in column **G** of the patient divided by square of the height in column **H** (in metres).
 - Format the answer to zero decimal places.
- NB: Please note that the height in column **H** is given in centimetre and has to be converted to metres using the values in cell **N2** and **O2**. (5)
- 3.6 Apply conditional formatting to the BMI values given in column **I**.
- Top 3 values should always be shaded.
 - Apply a thin horizontal crosshatch pattern style with yellow pattern colour. (3)
- 3.7 It is necessary to categorise each patient under a different BMI Category. They will be categorized according to their BMI which is given in column **I**. The BMI range and category are saved in the **BMI Category** worksheet.
Use a VLOOKUP function in cell **N5** on the **Patient Details** worksheet to display the correct BMI category for the patient. Copy the function to the rest of the cells. (6)
- 3.8 Calculate in cell **G26**, how many **males** eat a healthy diet (given in column **M**). (5)
- 3.9 Calculate the number of patients who are non-smokers, in cell **G28**. (2)
- 3.10 Calculate the average amount of money monthly spent on junk food by the patients, in cell **G30**. Round the answer to zero decimal places. (4)

- 3.11 The study conducted by the lab showed that more money was spent by women on junk food on a monthly basis than by men. Determine in cell **G32** the monthly amount spend by females on junk food. (4)
- 3.12 The hospital has conducted a test on the blood sugar levels of all the patients, which is shown in column **J**, to check if the patients are likely to have diabetes or not.

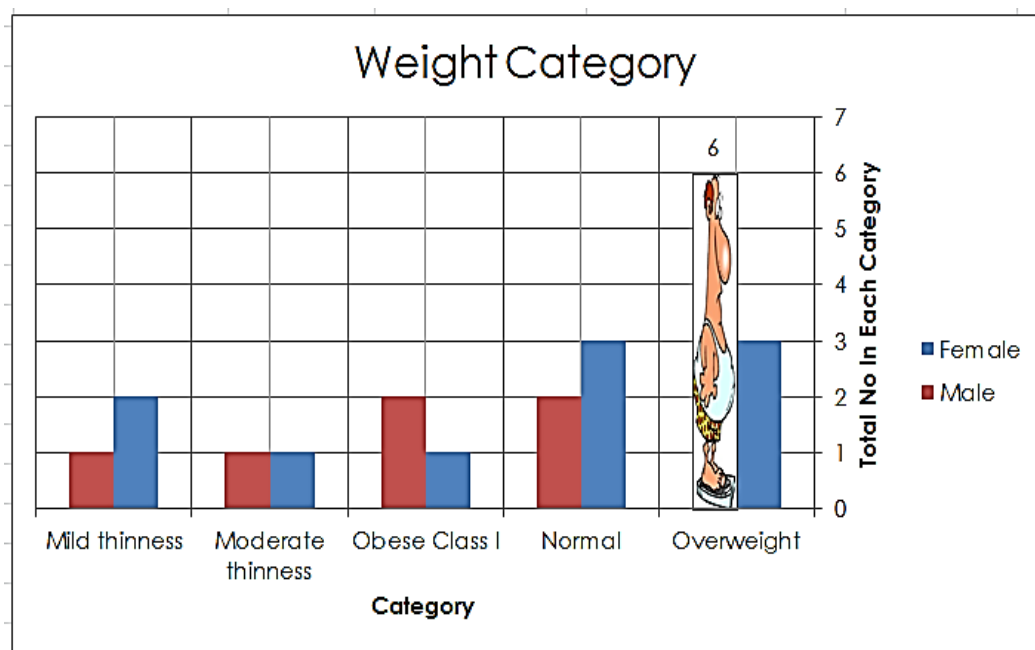
Blood Sugar Level	Diabetes
Blood sugar level greater than or equal to 120	Most Likely
Blood sugar level between 80 and 119	Least Likely
Blood sugar level less than 80	Not Likely

Add a function in cell **P5** to determine whether the patient '**Carl Raymond**' is likely to have diabetes or not.

Copy the function you added in cell **P5** to cells **P6:P24**. Ensure that it works correctly. (5)

Work in the **Graph** worksheet.

- 3.13 Change the graph to appear as follows:



NOTE:

- Add data label only for the highest value in the graph.
- Fill the highest data bar with the image **3_Overweight.jpg** and apply a black outline.
- Use a formatting option to display the x-axis values in the reverse order as shown in the screenshot.
- Display the vertical gridlines for major and minor units.

Save and close the **3_Heart Stat** spreadsheet.

(5)
[50]

QUESTION 4: DATABASE

A database for future reference is created for the patients treated at the hospital.

Open the **4_Heart Patients** database.

Format the **Patient Details** table as follows:

- 4.1 Change the row height to 20 pt. (1)
 - 4.2 Ensure that only the vertical gridlines are visible. (1)
 - 4.3 Add customised alternate row colour to the table in such a way that the **R (Red)**, **G (Green)** and **B (Blue)** colour levels are 200, 210 and 220 respectively. (3)
 - 4.4 Use a feature to find the average of all the ages found in the **Age** column, edit to zero decimal places. (2)
 - 4.5 Create an input mask on the **Patient Code** field to ensure that the user inserts a code made up as follows:
 - Two compulsory capital letters
 - Followed by a hyphen (-)
 - Two compulsory numbers and one optional number
 - Followed by a hyphen (-)
 - Then the capital letters LPH

Example: **AB-112-LPH** or **YZ-99-LPH** can be entered. (6)
 - 4.6 Choose an appropriate field as the primary key. (1)
 - 4.7 Change the data type of '**Money spent on junk food**' field to currency. (1)
- [15]**

QUESTION 5: DATABASE

A data set has been collected about patients and their different heart related problems.

Open the **5_Heart** database.

5.1 Amend the **Patient_History** table as follows:

Add a black gridline and sunken cell effect for the table. (2)

5.2 Work on the **Gender** field.

5.2.1 Add a validation rule to the **Gender** field so that it accepts only the values *male* and *female*. Add a suitable validation text as well so that the entry will be appropriate. (3)

5.2.2 Format the **Gender** field in such a way that it can accept duplicate values. (1)

5.3 Make **Age** a required field. (1)

5.4 Create a query called **qry5_4** based on the **Patient_History** table.

- Display only the **Name, Age, Height (in cm), Body Mass (in kg) and BMR** fields (see the next bullet).
- Insert a calculated field called **BMR** to find the Basal Metabolic Rate for all the female patients, which is calculated as follows:

$$\text{BMR(women)} = 655.0955 + (9.5634 \times \text{body mass in kg}) + (1.8496 \times \text{height in cm}) - (4.6756 \times \text{age in years}) \quad (7)$$

5.5 Open the query **qry5_5**. Display only the records of those patients whose ...

- Systolic blood pressure is more than 120, and
- Diastolic blood pressure should not be more than 95 and less than 90, and
- Where it displays which patients need any kind of medical attention under the **suggested action** field. (6)

5.6 Create a form called **frm5_6** based on the **Patient_History** table.

- Insert only the fields **Name, Gender, Sugar Level and Risk** fields.
- Change the heading in the form header to **Patient Sugar Levels**.
- Ensure that the dividing lines are visible.
- Make the default view of the form as continuous.
- Insert the image **5_Sugar Level.jpg** with height and width **5cm** in the detail section of the form. Make sure all the data are visible after the image is inserted. (6)

5.7 Create a report called **rpt5_7** based on the query **qry5_7**.

- Display only the fields **Name, Gender, Sugar Level (mmol/L) and Risk**.
- Group the records based on the **Sugar Level (mmol/L)** field and set the grouping intervals to 10s.
- Apply a conditional formatting to the **Risk** field so that the patients with *Very High* risk are shaded in red colour.
- Add a calculation in the group footer to count the total number of records under each category. Make sure a proper heading is given for the calculation. (7)

[33]

QUESTION 6: WEB DESIGN (HTML)

A web page has been created to give some first-hand information to people who are totally unaware of heart diseases.

Open the incomplete **6_HealthyHeart** web page in a web browser and also in a text editor, e.g. Notepad.

NOTE:

- Question numbers are inserted as comments in the coding as guidelines to show approximately where the answer(s) should be inserted.
- A HTML tag sheet has been attached for reference.
- Your final web page should look like the example below:

Heart Disease & You


Heart Disease, also known as **Cardiovascular Disease**, is a broad term that describes the different diseases that can occur in your heart and blood vessels.

There are several diseases that fall into the category of Heart Disease. They include:

- High Blood Pressure
- Coronary Heart Disease
- Stroke
- Heart Failure
- Heart Attack

You have heart disease when you have one or more of the above.

Stay In The GREEN ZONE Of The Blood Pressure Category Chart

Blood Pressure Category	Systolic mm Hg (Upper #)		Diastolic mm Hg (Lower #)
Normal	less than 120	and	less than 80
Prehypertension	120 - 139	or	80 - 89
High Blood Pressure (Hypertension) Stage 1	140 - 159	or	90 - 99
High Blood Pressure (Hypertension) Stage 2	160 or higher	or	100 or higher
Hypertensive Crisis (Emergency care needed)	Higher than 180	or	Higher than 110

With Heart Disease being the number one cause of death in people 65 and older, prevention is the first step you can take to benefit yourself.

What can you do?

- A. Talk to your Doctor
- B. Eat Less if Overweight
- C. Stop Smoking
- D. Lower Your Cholesterol
- E. Lower High Blood Pressure
- F. Get Regular Exercise


[Click here to view the TIPS on how to live a Healthy Life Style provided by THE HEART AND STROKE FOUNDATION SOUTH AFRICA](#)

Have Your Heart In The Right Place

- 6.1 Add the HTML code so that the text **Healthy Heart** appears in the browser tab. (2)
- 6.2 Change the font of the whole web page to 'Century Gothic' and size 3. (2)
- 6.3 Correct the HTML code to display the heading **Heart Disease & You** in heading 1 style. (1)
- 6.4 Change the word ***Cardiovascular Disease*** in the first paragraph to bold and italics. (2)
- 6.5 Make the following changes to the two horizontal lines on the web page. (2)
- Line thickness to 3
 - Line colour to black
- 6.6 Locate the table at the middle of the page after the heading ***Stay In The GREEN ZONE Of The Blood Pressure Category Chart.***

Add HTML code to format the table as follows:

- Insert the image **6_Heart Pressure.jpg** as the third column heading in the first row of the table as shown below:

Stay In The GREEN ZONE Of The Blood Pressure Category Chart			
Blood Pressure Category	Systolic mm Hg (Upper #)		Diastolic mm Hg (Lower #)

- Insert a row at the bottom of the table with the following data as shown below:

Hypertensive Crisis (Emergency care needed)	Higher than 180	Or	Higher than 110
---	-----------------	----	-----------------

- Change the background colour of this new row to red colour. (6)
- 6.7 Locate the bulleted list after the heading ***What can you do?***
- Modify the tags to ensure that the items appear as an ordered list. (2)
 - Edit the list numbers to appear in uppercase alphabets, e.g. A, B. (2)
- 6.8 Link the text on the web page starting with ***Click here to...*** to the file **Healthy Life Style.pdf** which is located in your examination folder. (2)
- 6.9 Centre the text at the bottom of the web page that reads ***Have Your Heart...*** (1)

[20]

QUESTION 7: GENERAL

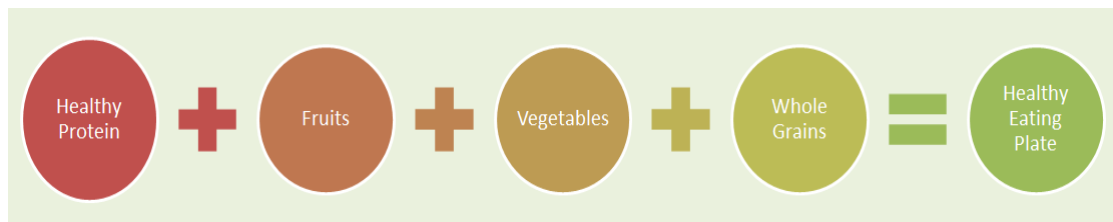
7.1 Open the **7_Food Diary** word processing document.

7.1.1 Merge the first two cells in the last row of the table. (1)

7.1.2 Use a function to find the total number of calories consumed by a person per day, in the yellow shaded area. (2)

7.1.3 Locate the organogram on the second page of the document.

- Add a shape before the shape named **Fruits** so that it may read **Healthy Protein** that it resembles the image below.



(2)

7.2 Open the **7_CHD Death Rates** spreadsheet.

7.2.1 The **Death Rates** worksheet shows the graph of death rates from Coronary Heart Disease among nations per 100 000 people aged 35 – 74. Unfortunately, **South Africa** was not included in the graph. Correct the graph so that South Africa is also included in the Graph, with the correct Death Rate. (2)

7.2.2 Use a spreadsheet feature to link the value in cell **B7** in the **Death Rates** worksheet to the cell **G7** in the **SA Death Rate** worksheet so that it will be automatically updated. (2)

7.3 Open the **7_Awareness** word processing document.

Use the **Patient Details** table in the database **4_Heart Patients** and prepare a mail merge as follows:

- Replace the texts 'Name' and 'Surname' at the top of the document with the fields **Name** and **Surname**. (3)
- Save the document.
- Complete the merge.
- Save the merged document as **7_AwarenessInvitation** in the examination folder. [12]

Save and close all the documents.

TOTAL: 180

ANNEXURE A - HTML TAG SHEET

Basic Tags	
Tag	Description
<body></body>	Defines the body of the web page
<body bg colour="pink">	Sets the background colour of the web page
<body text="black">	Sets the colour of the body text
<head></head>	Contains information about the document
<html></html>	Creates a HTML document – starts and ends a web page
<title></title>	Defines a title for the document
<!-- -->	Comment
Text Tags	
Tag	Description
<h1></h1>	Creates the largest heading
<h6></h6>	Creates the smallest heading
	Creates bold text
<i></i>	Creates italic text
	Sets size of font, from "1" to "7"
	Sets font colour
	Sets font type
Link Tags	
Tag	Description
	Creates a hyperlink
	Creates an image link
	Creates a target location
	Links to a target location created somewhere else in the document
Formatting Tags	
Tag	Description
<p></p>	Creates a new paragraph
<p align="left">	Aligns a paragraph to the "left" (default), can also be "right", or "center"
 	Inserts a line break
	Creates a numbered list
<ol type="A","a","I","i","1">	Defines the type of numbering used
	Creates a bulleted list
<ul type="disc","square","circle">	Defines the type of bullets used

Formatting Tags continued	
Tag	Description
	Inserted before each list item, and adds a number or symbol depending upon the type of list selected
	Adds an image
	Aligns an image: can also be "right", "center", "bottom", "top", "middle"
	Sets size of border around an image
	Sets the height and width of an image
	Displays alternative text when the mouse hovers over the image or when the image is not found
<hr/>	Inserts a horizontal line
<hr size="3"/>	Sets size (height) of line
<hr width="80%"/>	Sets width of line, in percentage or absolute value
<hr colour="ff0000"/>	Sets the colour of the line
Table Tags	
Tag	Description
<table></table>	Creates a table
<tr></tr>	Creates a row in a table
<td></td>	Creates a cell in a table
<th></th>	Creates a table header (a cell with bold, centred text)
<table width="50">	Sets the width of the table
<table border="1">	Sets the width of the border around the table cells
<table cellpadding="1">	Sets the space between the table cells
<table cellspacing="1">	Sets the space between a cell border and its contents
<tr align="left">	Sets the alignment for cell(s) (can also be "center" or "right")
<tr valign="top">	Sets the vertical alignment for cell(s) (can also be "middle" or "bottom")
<td colspan="2">	Sets the number of columns a cell should span
<td rowspan="4">	Sets the number of rows a cell should span

