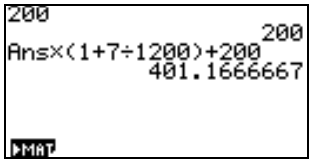
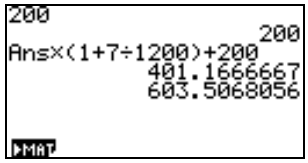
Saving for retirement.

Checkpoints

Activity 1

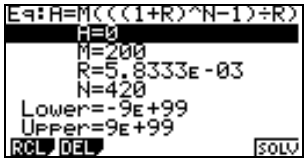
With this input EXE can be pressed repeatedly to see the annuity grow in value

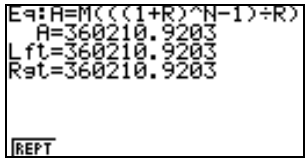




Activity 2

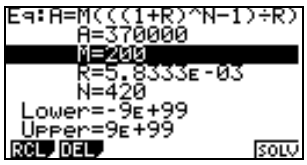
1.

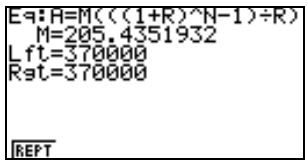




The future value is $360210.92 (to the nearest cent).

2.

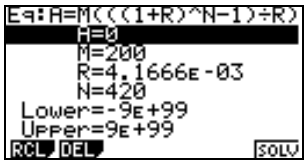


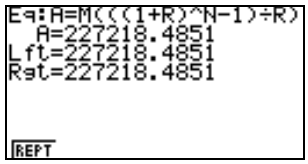


The monthly payments would be $205.44 (to the nearest cent).

3.

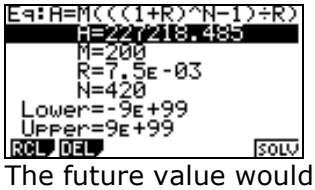
a)

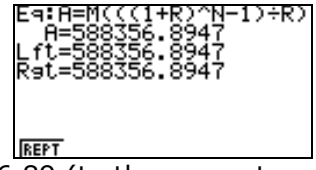




The future value would be $227218.49 (to the nearest cent).

b)



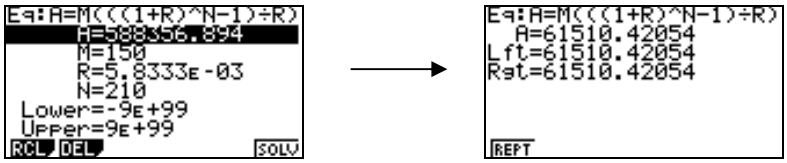


The future value would be $588356.89 (to the nearest cent).

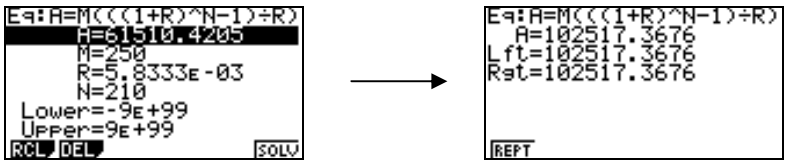
c)

The difference here is obviously very large. This is one reason why the results obtained from the 'super calculators' offered on the website's of some financial institutions vary widely and should be used with caution. ASIC offers their own 'calculator' and warn against relying the predictions gained elsewhere.

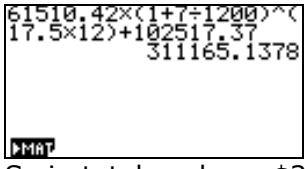
4.



This provides the future value of the first half of the super contributions Now we need to calculate the second half of the super contributions.



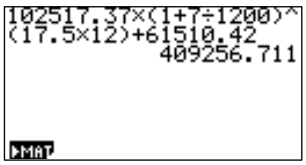
Now we need to keep the first 'half' growing at 7%. Note, this is a compound interest calculation *not* an annuity one because there are no further payments going into this 'half' of the super fund. This is then added to the second 'half' of the super fund.



So in total we have $311165.14 (to the nearest cent).

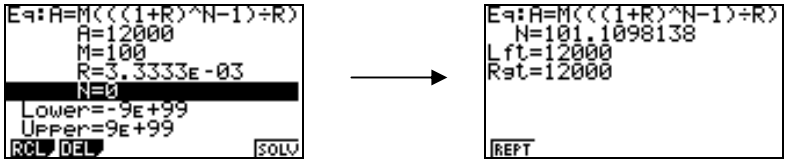
5.

Here the two 'halves' are reversed. Note that there is no need to do further annuity calculations, it is just that the big half now grows while the small half is accumulating. The result being $409256.71 (to the nearest cent).

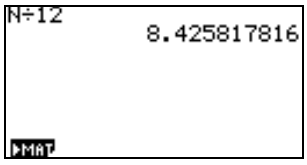


Activity 3

1.



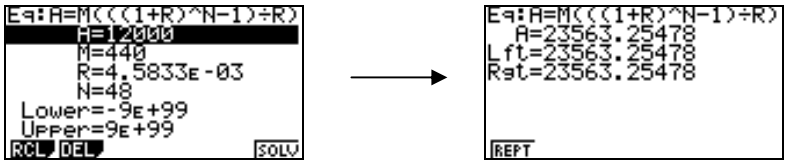
As the N value is periods – in this case months – we can get a more meaningful answer in years by dividing by 12.



So, it will take a little under 8 years and 6 months.

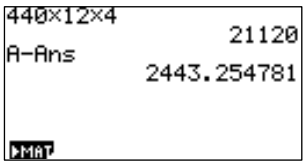
2.

a)



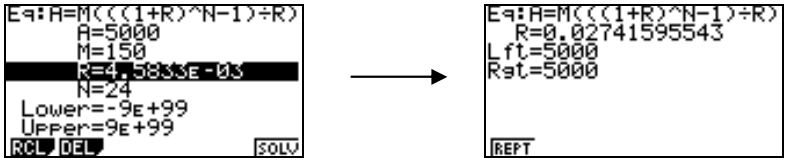
b)

To determine the amount of interest we need to calculate the value of the $440 contribution made every month for 4 years and then subtract this from the future value as found in part (a).

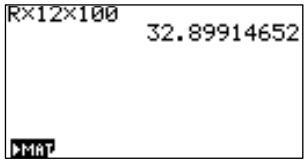


Hence we see the interest paid is $2443.25 (to the nearest cent).

3.



This monthly interest rate (as a decimal) can be converted to an annual percentage as below, giving an unlikely 32.9%.



4.

Note that the interest as a decimal per compounding period was 3.9/5200 due to the weekly compounding period.

Contributions of $37.73 (to the nearest cent) are required.