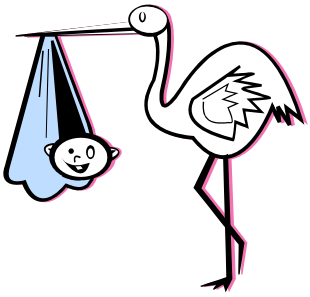
T1: THE BIRTHDAY GIFT – DECISIONS, ALWAYS DECISIONS!

John en Joan verwag hul eersteling. 'n Ryk tante bied hulle 'n keuse van geskenke vir die kind.



Geskenk A: Die kind ontvang R1 000 by geboorte, R2 000 op haar eerste verjaarsdag, R3 000 op haar tweede verjaarsdag, ens., tot haar 21ste verjaarsdag. Dus, sy begin met R1 000 en die geskenk vermeerder dan met R1 000 elke jaar, tot op haar 21ste verjaarsdag.

Geskenk B: Die kind ontvang 10c by geboorte (dis korrek!), 20c op haar eerste verjaarsdag, 40c op haar tweede verjaarsdag, ens., tot haar 21ste verjaarsdag. Dus, sy begin met 10c en die geskenk verdubbel dan elke jaar, tot op haar 21ste verjaarsdag.

Watter geskenk sou jy kies as jy John en Joan was?

1. Maak 'n Excel werkvel met *tabelle* en *grafieke* as *oplosmetode* en *illustrasie* om die volgende te vergelyk en te illustreer:
   - Die *bedrag wat sy op elke verjaarsdag ontvang*.
   - Die *kumulatiewe bedrag (die lopende totaal) wat sy oor tyd ontvang* – neem aan dat geen geld voor haar 21ste verjaardag onttrek word nie.

   Let op: Ignoreer die rente wat op die geskenke verdien kan word.

2. Gestel nou die ouers kan onderhandel oor die beginbedrag en die toename parameters vir albei geskenke, binne realistiese perke natuurlik. Maak nou die werkvel interaktief om die effek van die parameters dinamies te illustreer.
   Bepaal waardes waarvoor die twee geskenke ekwivalent (dieselfde) sal wees.

3. Maak nou 'n tweede werkvel wat die rente in ag – neem aan dat die rekening samegestelde rente van 5% per jaar verdien, en dat die rente jaarliks op haar verjaardag saamgestel en by die belegging gevoeg word.

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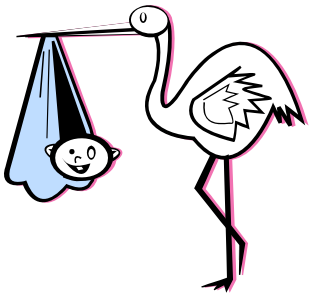
John and Joan are expecting their first child. A rich aunt offers them a choice of gifts for the child.



Gift A: The child will receive R1 000 at birth, R2 000 on her first birthday, R3 000 on the second, etc., until her 21st birthday. That is, she starts with R1 000 and then the gift increases by R1 000 each year, until her 21st birthday.

Gift B: The child will receive 10c at birth (that's right!), 20c on her first birthday, 40c on the second, etc., until her 21st birthday. That is, she starts with 10c and then the gift doubles each year, until her 21st birthday.

Which gift would you choose if you were John and Joan?

1. Make an Excel worksheet with *tables* and *graphs* as solution *method* and *illustration* to compare and illustrate:
   - The *amount she receives on each birthday*.
   - The *cumulative amount (the running total) she receives over time* – assume that no money is withdrawn until her 21st birthday.

   Note: Ignore the interest that may be earned on the investments.

2. Now suppose that the parents can negotiate the initial amount and the increase parameters for both gifts, within reasonable limits of course. Make the worksheet interactive to dynamically illustrate the effect of the parameters.
   Find values for which the two gifts will be equivalent (equal).

3. Now make a second worksheet to include interest – assume that the account earns compound interest at 5% per year, and that the interest is compounded and added to the investment annually on her birthday.