

# FINANCIAL LITERACY 20- NAME **KEY** DATE \_\_\_\_\_

## CALCULATE: What If You Invested That Latte?

Everyone has things they crave. Some people must always have a stick of gum on hand. Others need chapstick. Coffee is a daily ritual for many of us. On their own, all of these are relatively small purchases. However, over the course of a month or a year those expenses will add up to a LOT of money. *What if, instead of spending small amounts on a regular basis, you saved that money and invested it for retirement? How much money would you have in 30 years?*

1)

Item I'm Forgoing	Price
<b>Item:</b>	\$3
Calculate cost of this item for a full year. Assume you spend \$3 for 15 days a month for all 12 months in year	Cost= Price x 15 x 12 Cost = \$3 x 15 days/ month x 12 months =  \$ ___540___/year

### 2) Calculate Your Investment Growth

Now, let's see how much money you could earn if you invested that money instead of spending it. To do that, we will use Bankrate.com's [Return on Investment Calculator](#).

To make our calculations work, we need to make a few assumptions:

<b>Years</b>	30	For consistency, we'll keep the number at 30. However, in Part 3 you will have a chance to see the impact if you invest for a longer period of time.
<b>Rate of Return</b>	8%	This assumes you invest in an S&P 500 Index Fund, which has historically returned at an average rate of 7-9% each year.
<b>Initial Investment</b>	0	Since you are starting this today, you will have no money saved yet.
<b>Additional Investment &amp; Frequency</b>	\$ ___540___/year	Calculate how much money you would invest PER YEAR and enter it in as your <b>Additional Investment</b> . Then, select "PER YEAR" for <b>Frequency</b> .  Cost= Price x 15 x 12 (FROM ABOVE)
<b>Expected Inflation Rate</b>	3%	This assumes costs will go up, so your investment will go up too.
<b>Tax Rate</b>	0%	This assumes you are investing the money in a TFSA
<b>Inflation Adjustment</b>	Check the Box	This will account for the fact that your item will not be sold at its current price for the next 30 yrs. <b>A latte may cost \$3 today but cost \$5 in 10 yrs.</b>
<b>Show Values After Inflation</b>	DO NOT Check the Box	When the box IS NOT checked, it will show how much money you will have in total IN 30 YEARS.

Results - Click "View Reports" to see an in-depth summary of the growth of your investments. In the chart below, enter the results for each section **4 MARKS**

<b>After 30 years you could have: (FILL IN TOTAL HERE) \$ <u>89059</u></b>		
<b>Invested Capital - What you personally deposited</b>  <b>25691 / 89059= 29%</b>	<u>Simple Interest</u> - The sum of the yearly 8% return on your investment  <b>27364 / 89059=</b>	<u>Compound Interest</u> - Sum of the yearly 8% return on the simple interest you've already earned  <b>36005 / 89059</b>

- A. Looking at the total value of your investment fund after 30 years, what percentage of it came from money that you invested (the actual \$\$ you saved by forgoing your chosen item)? What percentage came from interest (simple and compound combined)? **3 MARKS**

29% INVESTED, 71% INTEREST

- B. Which of the three sections contributed the largest portion of your investment fund?

COMPOUND INTEREST

- C. What conclusions can you draw about the power of interest?

Interest on interest is the way to go!

### 3) Change the Assumptions

So as you can see, investing the money spent on those small daily purchases can help you build a pretty enormous investment fund. However, let's examine how your investment growth would change if you changed some specific assumptions.

- A. Length of Time - 30 years may not be a reasonable amount of time for you to invest that money. Assuming all other assumptions stay the same, how much money would you have after: **3 MARKS**

- a. **5 years**

\$3616

- b. **10 years**

\$9506

- c. **Until you turn 65**

About \$495,927

B. Change the Amount of Annual Investment - Maybe the item you chose isn't something you buy every day. Assuming all other assumptions stay the same (reset time period to 30 years, return is 8%, 0% tax rate), how much money would you have if you bought your item: **2 MARKS**

a. **Once a week** (amount you are saving from above x 52 weeks)

\$4,460,658

b. **Once a month** (amount you are saving from above x 12 months)

\$1,031,923

C. Show Values Before/After Inflation. To get a sense of the effect of inflation over time, look at how the total amount of your investment fund changes when you adjust for inflation versus not. **2 MARKS**

<p><b>Total \$ when the "Show Values After Inflation" box is checked</b></p> <ul style="list-style-type: none"> <li>This shows how much money you will have in 30 years <u>translated into today's dollar value</u></li> </ul>	<p>\$425,139 (\$540/per month) \$36,691 (\$540/per year)</p>
<p><b>Total \$ when the "Show Values After Inflation" box is NOT checked</b></p> <ul style="list-style-type: none"> <li>This shows how much money you will have in 30 years</li> </ul>	<p>\$1,031,923 (\$540/month) \$89,059 (\$540/per year)</p>

a. What conclusion can you draw about the value of money over time? Will \$1 be more valuable today or in 30 years? **2 MARKS**

More valuable today!

# 77 Reasons Why Investors Avoided the Stock Market...

- |  |   |
|--|---|
| 1926 Joseph Stalin ruled as dictator of the USSR           | 1966 Vietnam War escalated                                    |
| 1927 German economy collapsed                              | 1967 Six-Day War in Middle East                               |
| 1928 "Roaring 20s" pushed stock market to new highs        | 1968 Martin Luther King Jr. Assassination                     |
| 1929 "Black Tuesday" stock market crashed                  | 1969 Money tightened - stock market declined                  |
| 1930 Hawley-Smoot tariff Act                               | 1970 US invaded Cambodia                                      |
| 1931 Unemployment rate soared; US banks collapsed          | 1971 Wage-price freeze  |
| 1932 Dow hit depression-era low                            | 1972 Watergate scandal began                                  |
| 1933 Hitler named German Chancellor - Nazi terror began    | 1973 Arab oil embargo - oil prices tripled                    |
| 1934 Depression continued                                  | 1974 President Nixon resigned from office                     |
| 1935 Labor union strikes                                   | 1975 Fall of Saigon   |
| 1936 Spanish Civil War                                     | 1976 Economy still struggled                                  |
| 1937 Recession   | 1977 Stock market slumped                                     |
| 1938 Hitler Annexed Austria                                | 1978 Interest rates rose                                      |
| 1939 World War II began                                    | 1979 Iran hostage crisis - oil prices skyrocketed             |
| 1940 Fall of France  | 1980 Hunt brothers silver market crisis                       |
| 1941 Japanese attacked Pearl Harbor                        | 1981 Interest rates remained elevated                         |
| 1942 Price controls initiated - shortage of consumer goods | 1982 Worst recession in 40 years                              |
| 1943 Detroit race riots                                    | 1983 US invaded Grenada                                       |
| 1944 D-Day - allied forces invade Normandy                 | 1984 AIDS virus identified                                    |
| 1945 Post-war recession predicted                          | 1985 Economic growth slowed                                   |
| 1946 Cold War began  | 1986 US bombed Libya; Iran-Contra affair broke                |
| 1947 "Red Scare" revisited                                 | 1987 "Black Monday" - stock market crashed                    |
| 1948 Berlin blockade                                       | 1988 US Savings and loan crisis peaked                        |
| 1949 USSR detonated atomic bomb                            | 1989 US invaded Panama  |
| 1950 Korean War began                                      | 1990 Persian Gulf War   |
| 1951 Excess Income and Profits tax                         | 1991 Global recession   |
| 1952 Steel labor dispute - US seized mills                 | 1992 ERM U.K. currency crisis                                 |
| 1953 USSR detonated hydrogen bomb                          | 1993 Great Midwest Floods in US                               |
| 1954 Stock market reached new highs                        | 1994 Mexican Peso collapsed                                   |
| 1955 President Eisenhower suffered heart attack            | 1995 Oklahoma City bombing                                    |
| 1956 Suez Canal crisis                                     | 1996 Fed Chairman Greenspan warned of "irrational exuberance" |
| 1957 USSR launched Sputnik satellite                       | 1997 Asian financial crisis                                   |
| 1958 Recession   | 1998 Russian default/LTCM crisis; Whitehouse sex scandal      |
| 1959 Castro became dictator of Cuba                        | 1999 Y2K fears; Dow reached 11,000 for the first time         |
| 1960 USSR shot down U-2 spy plane                          | 2000 Money tightened - Dot-com bubble burst                   |
| 1961 Berlin Wall built                                     | 2001 World Trade Center/Pentagon terrorist attacks            |
| 1962 Cuban missile crisis                                  | 2002 Corporate accounting issues                              |
| 1963 President Kennedy Assassination                       |   |
| 1964 Gulf of Tonkin resolution                             |   |
| 1965 Civil rights demonstrations                           |   |

Meanwhile, the S&P 500 Index had an annual compounded total return of 10.2% (through 12/31/2002). A hypothetical investment of \$10,000 made on 1/1/1926 would have been worth \$19,451,567 on 12/31/2002.

Year after year people think of reasons why they should not invest in the stock market. And over time, the stock market outperforms virtually all other investment opportunities.

If investors would have invested from Jan 1, 1926 until Dec 31, 2002, a \$10,000 investment would have grown to \$19,451,567 on the S&P 500 index (stock market in the US.)

Why do people avoid the stock market or investing?

What are they afraid of? 3 MARKS

*Investors are afraid of losing month, of the volatility, of the unknown, of how long the down turn might last, what if they need the money now?*