**KNOWLEDGE EXPECTED OF:** Both FPSC Level 1® Certificants and CFP® Professionals

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Gillian is a 33-year-old professional and single mother to a seven-year-old girl, Pepper. Six years ago she left a challenging relationship. The court gave her speedy approval to divorce her former partner and sell the property they jointly owned. Gillian has identified three priorities:

- She would like to leave the rental unit where she has been living for five years and buy a house within 3 years, after accumulating a $50,000 down payment. She expects the costs of home ownership to be comparable to her current rent, so she doesn't think the move will impact her cash flow.

- She would like to accumulate sufficient funds to pay for four years of secondary education for Pepper, at an expected cost of $15,000 in today's dollars at the start of each year over four years, indexed for inflation. She expects Pepper will start post-secondary school in 11 years.

- She hopes to retire when she is 62. Based on her expected lifestyle in retirement, she would like to receive a fixed amount of after-tax income of $45,000 in today's dollars at the beginning of each year from her investments to supplement her government retirement benefits.

Gillian has a growth-oriented risk profile. Within her group Registered Retirement Savings Plan (RRSP), she has a 70-30 split of equity and fixed-income investments. She may reduce the risk profile of her retirement portfolio to 50-50 split of equity and fixed income investments when she retires. While inconsistent with her risk profile, she has been thinking about investing in a more conservative 50-50 split of fixed income and equity investments for her daughter's education because of the shorter timeline until the funds are needed.

Gillian earns a gross annual salary of $85,000 and has an average tax rate of 26 percent. She expects her average tax rate in retirement to be 22 percent. She keeps a balance of $5,000 in her chequing account to pay her monthly expenses. She also has $8,000 in cash in her non-registered investment account, which she uses for emergencies.

At the end of each month, Gillian contributes $500 toward her Tax-Free Savings Account (TFSA), $300 toward her group RRSP and $500 toward her non-registered investment account, for total savings of $1,300 monthly. She estimates she could save another $250 per month if she quits smoking; however, she is unsure of her chance of success given her failed attempts in the past.

Her employer matches contributions to her group RRSP of up to six percent of her annual salary. The account is currently valued at $23,000. To encourage long-term saving, her employer will not match her contributions for the following 12 months if she withdraws or transfers funds from the group RRSP.

Gillian also owns $27,000 in shares of her employer within a Deferred Profit-Sharing Plan (DPSP). Given the financial difficulties her employer has been experiencing lately, she would prefer that any retirement projections exclude her DPSP.

Gillian's TFSA is valued at $25,000 and she has earmarked this for her down payment on a house. It is currently earning interest at one percent annually, not subject to fees.

Gillian's only other significant asset is her car, which is worth $15,000. She does not have any outstanding loans or credit card debt.

When Gillian accumulates $50,000 for a down payment on a home, she will invest future TFSA contributions according to the same asset allocation as her group RRSP. Once she has built up an emergency fund of $20,000 to cover six months of expenses in her non-registered investment account, she will be able to reallocate those savings toward her other goals as well. Gillian expects the management fees on her investable assets will be 1 percent annually, except for the cash balance currently within her TFSA, which is not subject to fees.

Although Gillian is saving $1,300 per month, she feels it may not be enough. She wants to know if she is on track to meet her goals, and what her next steps should be to ensure she will meet them.

### Knowledge Expectations – Financial Analysis

The FPSC Level 1 Certificant in Financial Planning and CFP Professional should be able to:

- Construct a current net worth statement for Gillian.

**Personal Net Worth**
**for Gillian**

| | |
|---|---:|
| Chequing account | $5,000 |
| Emergency fund (non-registered cash account) | $8,000 |
| Car | $15,000 |
| **Total Personal Assets** | **$28,000** |
| | |
| Tax-Free Savings Account (TFSA) | $25,000 |
| Deferred Profit Sharing Plan (DPSP) | $27,000 |
| Group Registered Retirement Savings Plan (RRSP) | $23,000 |
| **Total Investable Assets** | **$75,000** |
| | |
| **Total Assets** | **$103,000** |
| **Total Liabilities** | **$-** |
| **Net Worth** | **$103,000** |

- Identify that Gillian has a positive financial position with no debt and some liquid assets in the event of emergencies.

### Knowledge Expectations – Saving for Down Payment

The FPSC Level 1 Certificant in Financial Planning and CFP Professional should be able to:

- Identify that Gillian hopes to have $50,000 for a down payment in the next three years.

- Identify that Gillian has already saved $25,000 toward this goal.

- Identify that the assets being saved in a TFSA for Gillian's down payment will grow at one percent annually.

- Calculate that 1 percent compounded annually is equivalent to 0.9954 percent compounded monthly.[1]

- Calculate that, based on contributions of $500 per month to her TFSA, it will take Gillian 47[2] months to save the required $50,000, which is longer than she was hoping for.

- Identify that Gillian will qualify to withdraw up to $25,000 from her RRSP under the Home Buyer's Plan (HBP) for her down payment, because she has not lived in a property that she has owned in the previous four years.

- Identify that if Gillian transfers funds from her group RRSP to a personal RRSP in her name to facilitate a HBP withdrawal, she will lose the matching contributions provided by her employer for the following year.

- Identify that Gillian is concerned about the long-term viability of her employer's company and thus the company's shares in her DPSP.

- Explain that Gillian could transfer the funds from her DPSP to a personal RRSP without an immediate tax liability. She could then withdraw up to $25,000 under the HBP.

- Explain that if Gillian withdraws $25,000 from her RRSP under the HBP, she must make annual repayments of at least $1,666.66[3] beginning in the second year after the withdrawal. The HBP loan must be repaid within 15 years, starting in the second year after the HBP withdrawal was made.

- Explain that while Gillian should not withdraw funds under the HBP from her group RRSP, she may designate a contribution to any RRSP, including a group RRSP, as her HBP repayment.

- Identify that her employer will match her group RRSP contributions up to $5,100 per year.[4]

- Explain that contributing her HBP repayments to her group RRSP will benefit her more than contributing to a personal RRSP, because she will continue to earn matching contributions from her employer on the repayments (subject to the $5,100 maximum).

### Knowledge Expectations – Education Planning

The FPSC Level 1 Certificant in Financial Planning and CFP Professional should be able to:

- Identify that Gillian has 11 years remaining to save for Pepper's post-secondary education.

- Calculate that Gillian may expect to earn an annual rate of return of 5.20 percent[5] on her education savings, based on the return assumptions provided in the *2017 Projection Assumption Guidelines*.

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[1] EFF% = 1% compounded annually, P/YR = 12, CPT NOM% = 0.9954% compounded monthly
[2] I = 0.9954 ÷ 12 = 0.0830% per month, PV = $25,000, PMT = $500, FV = - $50,000, MODE = END, CPT N = 47.1 months
[3] $25,000 ÷ 15 = $1,666.66
[4] $85,000 × 6%
[5] (0.50 × 3.9%) + (0.50 × 6.5%)

- Calculate that after fees, Gillian may expect to earn a net rate of return of 4.20 percent[6] on her education savings.

- Calculate that if the education savings are invested outside of a registered plan, Gillian may expect to earn an after-tax net rate of return of 3.11 percent.[7]

- Identify that the inflation rate provided in the *2017 Projection Assumption Guidelines* is 2 percent.

- Identify that Gillian wants to fund education costs of $15,000 per year in current dollars, indexed for inflation during Pepper's post-secondary education.

- Calculate that $15,000 in today's dollars is equivalent to $18,650.61[8] in 11 years, based on a 2 percent annual inflation rate.

- Calculate that the inflation-adjusted after-tax rate of return while Pepper is in school is 1.09 percent.[9]

- Calculate that if the education savings are in a non-registered plan, Gillian will need to accumulate $73,404[10] in 11 years to cover the costs associated with Pepper's education.

- Identify that Gillian may benefit from investing her savings toward Pepper's education in an RESP.

- Explain that investing in an RESP will enable assets to grow tax-deferred until they are withdrawn and that Canada Education Savings Grants (CESGs) totalling up to $500 per year may also be earned when a qualifying contribution of $2,500 is made to the RESP. Lifetime RESP contributions are limited to $50,000.

- Explain that grant room accumulates for a child until the end of the year in which the child turns 17. When there is unused grant room available as a carry forward from previous years, as in Gillian's case, RESP contributions may qualify for CESGs up to $1,000 per year, or 20 percent on contributions of $5,000 per year, until the maximum CESG of $7,200 is reached.

- Explain that if Pepper does not attend a qualifying program, CESGs will need to be repaid. However, Gillian may withdraw her contributions with no tax implication and transfer the earnings, minus a 20 percent tax, from the plan to her RRSP.

- Identify that Pepper has six years of carry forward CESG room in addition to this year's room.

- Identify that if Gillian uses the strategy of transferring her DPSP to a personal RRSP and using the HBP to fund her down payment, she could redirect her current TFSA contributions to an RESP for Pepper by making an annual contribution of $6,000 at the end of each year.

- Identify that if Gillian contributions $6,000 to an RESP annually, she will reach the RESP and CESG contribution limits by the time Pepper is 15.

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[6] 5.2% - 1.0%

[7] 4.20% × (1 - 0.26)

[8] N = 11, I = 2%, PV = $15,000, PMT = $0, MODE = END, CPT FV= $18,650.61

[9] (3.11% - 2%) ÷ 1.02 = 1.09%

[10] N = 4, I = 1.09%, PMT = $18,650.51, FV = $0, MODE = BEG, CPT PV = $73,404.10

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| | CESG room at beginning of year | RESP contribution this year | Cumulative RESP contributions | Contribution eligible for grant this year | CESG room at end of year | CESG paid this year | Cumulative CESG paid | RESP + CESG |
|---|---|---|---|---|---|---|---|---|
| Age 7 | $17,500 | $6,000 | $6,000 | $5,000 | $12,500 | $1,000 | $1,000 | $7,000 |
| Age 8 | $15,000 | $6,000 | $12,000 | $5,000 | $10,000 | $1,000 | $2,000 | $7,000 |
| Age 9 | $12,500 | $6,000 | $18,000 | $5,000 | $7,500 | $1,000 | $3,000 | $7,000 |
| Age 10 | $10,000 | $6,000 | $24,000 | $5,000 | $5,000 | $1,000 | $4,000 | $7,000 |
| Age 11 | $7,500 | $6,000 | $30,000 | $5,000 | $2,500 | $1,000 | $5,000 | $7,000 |
| Age 12 | $5,000 | $6,000 | $36,000 | $5,000 | $0 | $1,000 | $6,000 | $7,000 |
| Age 13 | $2,500 | $6,000 | $42,000 | $2,500 | $0 | $500 | $6,500 | $6,500 |
| Age 14 | $2,500 | $6,000 | $48,000 | $2,500 | $0 | $500 | $7,000 | $6,500 |
| Age 15 | $1,000 | $2,000 | $50,000 | $1,000 | $0 | $200 | $7,200 | $2,200 |
| Age 16 | maxed out | maxed out | $50,000 | maxed out | maxed out | $0 | $7,200 | $0 |
| Age 17 | maxed out | maxed out | $50,000 | maxed out | maxed out | $0 | $7,200 | $0 |

- Determine that by the end of the year in which Pepper is 17, the RESP will have a value of $74,728[11], which will be more than sufficient to meet her needs.

- Identify that the RESP asset allocation of 50 percent fixed income and 50 percent equities is more conservative than Gillian's given growth-oriented risk profile. She may be able to contribute less than $6,000 per year and still meet her education objective if she adopts an investment allocation that is more suitable to her risk profile.

**Knowledge Expectations – Retirement Planning**

The FPSC Level 1 Certificant in Financial Planning and CFP Professional should be able to:

- Identify that Gillian has 29 years until her preferred retirement age.

- Explain that Gillian should plan for a life expectancy of 96 because, based on the *2017 Projection Assumption Guidelines*, there is a 25 percent chance she will live to this age. This life expectancy should be reviewed in the future, based on Gillian's age and whether she continues to smoke.

- Calculate that these assumptions require planning for a 34-year[12] retirement duration.

- Calculate that Gillian may expect to earn an annual rate of return of 5.58 percent[13] on any long-term retirement investments until her retirement, based on the return assumptions provided in the *2017 Projection Assumption*

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[11] By the end of Age 12, RESP will be worth $46,665, N = 6, I = 4.2%, PV = $0, PMT = $7,000, MODE = END, CPT FV = $46,665
By the end of Age 14, RESP will be worth $63,940, N = 2, I = 4.2%, PV = $46,665, PMT = $6,500, MODE = END, CPT FV = $63,940
By the end of Age 15, RESP will be worth $68,825, N = 1, I = 4.2%, PV = $63,940, PMT = $2,200, MODE = END, CPT FV = $68,825
By the end of Age 17, RESP will be worth $74,728, N = 2, I = 4.2%, PV = $68,825, PMT = $0, MODE = END, CPT FV = $74,728

[12] Age 96 – 62 = 34 years

[13] Expected gross rate of return until retirement = (3.9% × 0.30) + (6.5% × 0.7) = 5.58%

- Calculate that, after fees, Gillian may expect to earn a net rate of return of 4.58[14] percent on any long-term retirement investments until her retirement.

- Calculate that Gillian may expect to earn an annual rate of return of 5.20 percent[15] on any long-term retirement investments during her retirement, based on the return assumptions provided in the *2017 Projection Assumption Guidelines.*

- Calculate that, after fees, Gillian may expect to earn a net rate of return of 4.20 percent[16] on any long-term retirement investments during her retirement.

- Identify that in 29 years, Gillian would like to receive an after-tax fixed amount of $45,000 per year in today's dollars at the start of each year in retirement.

- Identify that the inflation rate provided in the *2017 Projection Assumption Guidelines* is 2 percent.

- Calculate that $45,000 today is equivalent to $79,913.01[17] in 29 years, based on a 2 percent inflation rate.

- Identify that Gillian already has $23,000 in her group RRSP.

- Identify that Gillian is not currently maximizing her entitlement under her group RRSP to receive her employer's matching contribution.

- Calculate that to maximize her entitlement under her group RRSP, Gillian should increase her contributions from $300 monthly to $425 monthly.[18]

- Calculate that by doing so, Gillian will increase the total combined personal and employer contributions to her group RRSP to $850 monthly or for simplicity $10,200[19] at the end of each year.

- Recommend that Gillian divert $125 of the $500 that she currently adds to her emergency fund each month to her group RRSP to maximize her employer's matching contribution.

- Calculate that by doing so, Gillian will still achieve her desired $20,000 emergency fund in 32 months[20] or approximately 3 years.

- Identify that once she achieves her goal of a $20,000 emergency fund in 3 years, she can redirect $375 monthly or $4,500 at the end year of each to a personal RRSP.

- Identify that her current RRSP contribution limit, excluding any carry forward room, is $15,300 annually[21] and that the above contributions still fall within that limit.

- Identify that when she is finished funding the RESP for Pepper in 9 years, she can redirect $6,000 annually to her TFSA.

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[14] Expected net rate of return until retirement = 5.58% - 1.0% = 4.58%
[15] Expected gross rate of return during retirement = (3.9% × 0.50) + (6.5% × 0.5) = 5.20%
[16] Expected net rate of return during retirement = 5.20% - 1.0% = 4.2%
[17] N = 29; I/Y = 2%; PV = $45,000; PMT = $0; CPT FV = $79,913.01
[18] 6% × $85,000 ÷ 12
[19] $425 × 2 × 12
[20] ($20,000 - $8,000) ÷ ($500 - $125) = 32
[21] $85,000 × 18%

- Calculate that Gillian's group RRSP will amount to $677,679[22] by the time she retires at age 62.

- Calculate that Gillian's personal RRSP will amount to $216,530[23] by the time she retires at age 62.

- Calculate that Gillian's TFSA will amount to $189,813[24] by the time she retires at age 62.

- Calculate that her combined group and personal RRSPs can sustain withdrawals of $47,859[25] over her 34-year retirement planning horizon.

- Calculate that these withdrawals will amount to $37,330[26] after tax.

- Calculate that her TFSA can fund after-tax income of $10,159[27] over her 34-year retirement planning horizon.

- Estimate that her combined after-tax income during retirement will result in an annual shortfall of 32,424[28].

- If she quits smoking and directs the annual savings of $3,000 to her personal RRSP (assuming she has sufficient room), she could accumulate another $174,528[29] by retirement, which would sustain additional after-tax income of $4,004[30], reducing her shortfall to $28,420[31] annually.

- Explain to Gillian that all of the projections are based on assumptions that can change over time, particularly over such a long planning horizon.

- Identify factors that could significantly impact projections, including her income, her continued participation in her employer's group RRSP, her expenses and her ability to save the anticipated amounts, inflation, the rate of return on her investments, the age at which she retires and her life expectancy.

- Explain that given the magnitude of the anticipated shortfall, Gillian's goal of retiring at age 62 with her desired lifestyle is not realistic based on her current situation. However, given that she is only 33 years old, advancements in her career may increase the amount she can save towards retirement in the future.

- Explain that other trade-offs she may have to consider include delaying her retirement, working part-time in retirement, or reducing her expenses in retirement.

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[22] N = 29, I = 4.58%, PV = $23,000, PMT = $10,200, MODE = END, CPT FV = $677,679

[23] N = 26, I = 4.58%, PV = $0, PMT = $4,500, MODE = END, CPT FV = $216,530

[24] N = 20, I = 4.58%, PV = $0, PMT = $6,000, MODE = END, CPT FV = $189,813

[25] N = 34, I = 4.20%, PV = $677,679 + $216,530 = $894,209, FV = $0, MODE = BEG, CPT PMT = $47,859

[26] $47,859 x (1 - .22) = $37,330

[27] N = 34, I = 4.20%, PV = $189,813, FV = $0, MODE = BEG, CPT PMT = $10,159

[28] $37,330 + $10,159 - $79,913 = -$32,424

[29] N = 29, I = 4.58%, PV = 0, PMT = $3,000, MODE = END, CPT FV = $174,528

[30] N = 34, I = 4.20%, PV = $174,528, FV = $0, MODE = BEG, CPT PMT = $5,133 before tax; $5,133 × (1 - 0.22) = $4,004 after-tax

[31] $32,424 - $4,004 = $28,420

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