**Using Present Value**

Calculate the answers to each of the following questions.

1. If your grandma said you could have $5,000 when you graduate from college in four years, what is that money worth today? Calculate your answer when the real interest rate is 3%, 5%, and 10%
2. Sally has a decision to make about what she will do in the next 2 years. She can go to school or go straight into the work force. If Sally immediately starts working, she will earn $20,000 in both years 1 and 2. If she goes to school in year 1, she must pay $5,000, but she would earn $47,500 in year 2. If the interest rate is 5%, calculate the present value for Sally if she goes to school and if she does not. Does the investment in school make sense? Does it make sense if the interest rate is 6% or 4%?
3. Your neighbor found out his uncle left him $450,000 which he will receive on his 18th birthday next year. If the real interest rate is 5%, what is the present value of his inheritance? What if the interest rate was 2%?

# Using Present Value Answer Key

## Calculate the answers to each of the following questions.

* 1. If your grandma said you could have $5,000 when you graduate from college in four years, what is that money worth today? Calculate your answer when the real interest rate is 3%, 5%, and 10%

*PV = $5,000/(1+r)4*

*If r=3%, PV = $4,442.43 If r=5%, PV = $4,113.51 If r=10%, PV = $3,415.07*

* 1. Sally has a decision to make about what she will do in the next 2 years. She can go to school or go straight into the work force. If Sally immediately starts working, she will earn $20,000 in both years 1 and 2. If she goes to school in year 1, she must pay $5,000, but she would earn $47,500 in year 2. If the interest rate is 5%, calculate the present value for Sally if she goes to school and if she does not. Does the investment in school make sense? Does it make sense if the interest rate is 6% or 4%?

*School: PV = -5,000/(1.05) + 47,500/(1.05)2 = $38,322.00 Workforce: PV = 20,000/(1.05) + 20,000/(1.05)2 = $37,188.21*

*The investment in school is better for Sally. A different interest rate will not make a difference.*

* 1. Your neighbor found out his uncle left him $450,000, which he will receive on his 18th birthday next year. If the real interest rate is 5%, what is the present value of his inheritance? What if the interest rate was 2%?

*PV = 450,000/(1+r)*

*If r=5%, PV = $428,571.42 If r=2%, PV = $441,176.47*