**Question 1**

1. A project has an initial investment of 100. You have come up with the following estimates of the project's cash flows:  Suppose the cash flows are perpetuities and the cost of capital is 10%. What does a sensitivity analysis of NPV (no taxes) show? (Answers appear in order: [Pessimistic, Most Likely, Optimistic].)



|  |  |  |
| --- | --- | --- |
|  |  | -50, 20, +100. |
|  |  | -100, -50, +80. |
|  |  | -50, +50, +70. |
|  |  | +5, +11, +18. |

0.6757 points

**Question 2**

1. A project has the following cash flows: *C*0 = -100,000; *C*1 = 50,000; *C*2 = 150,000; *C*3 = 100,000. If the discount rate changes from 12% to 15%, what is the CHANGE in the NPV of the project (approximately)?

|  |  |  |
| --- | --- | --- |
|  |  | 12,750 increase |
|  |  | 12,750 decrease |
|  |  | 14,240 increase |
|  |  | 14,240 decrease |

0.6757 points

**Question 3**

1. A project requires an initial investment in equipment of $90,000 and then requires an initial investment in working capital of $10,000 (at *t* = 0). You expect the project to produce sales revenue of $120,000 per year for three years. You estimate manufacturing costs at 60% of revenues. (Assume all revenues and costs occur at year-end, i.e.,*t* = 1, *t* = 2, and *t* = 3.) The equipment depreciates using straight-line depreciation over three years. At the end of the project, the firm can sell the equipment for $10,000 and also recover the investment in net working capital. The corporate tax rate is 30% and the cost of capital is 15%. Cash flows from the project are:

|  |  |  |
| --- | --- | --- |
|  |  | CF0: -90,000; CF1: 12,600; CF2: 12,600; CF3: 29,600. |
|  |  | CF0: -100,000; CF1: 42,600; CF2: 42,600; CF3: 59,600. |
|  |  | CF0: -100,000; CF1: 42,600; CF2: 42,600; CF3: 42,600. |
|  |  | CF0: -100,000; CF1: 42,600; CF2: 42,600; CF3: 49,600. |

0.6757 points

**Question 4**

1. A project requires an initial investment in equipment of $90,000 and then requires an initial investment in working capital of $10,000 (at *t* = 0). You expect the project to produce sales revenue of $120,000 per year for three years. You estimate manufacturing costs at 60% of revenues. (Assume all revenues and costs occur at year-end, i.e., *t* = 1, *t* = 2, and *t* = 3.) The equipment depreciates using straight-line depreciation over three years. At the end of the project, the firm can sell the equipment for $10,000 and also recover the investment in net working capital. The corporate tax rate is 30% and the cost of capital is 15%. Calculate the NPV of the project:

|  |  |  |
| --- | --- | --- |
|  |  | $3,840. |
|  |  | $8,443. |
|  |  | $-2,735. |
|  |  | $7,342. |

0.6757 points

**Question 5**

1. A project requires an initial investment in equipment of $90,000 and then requires an initial investment in working capital of $10,000 (at *t* = 0). You expect the project to produce sales revenue of $120,000 per year for three years. You estimate manufacturing costs at 60% of revenues. (Assume all revenues and costs occur at year-end, i.e., *t* = 1, *t* = 2, and *t* = 3.) The equipment depreciates using straight-line depreciation over three years. At the end of the project, the firm can sell the equipment for $10,000 and also recover the investment in net working capital. The corporate tax rate is 30% and the cost of capital is 15%. What is the NPV of the project if the revenues were higher by 10% and the costs were 65% of the revenues?

|  |  |  |
| --- | --- | --- |
|  |  | $8,443 |
|  |  | $964 |
|  |  | $5,566 |
|  |  | $4,840 |

0.6757 points

**Question 6**

1. Companies with high ratios of fixed costs to project values tend to have high betas.

True

False

0.6757 points

**Question 7**

1. Company A's historical returns for the past three years are: 6%, 15%, and 15%. Similarly, the market portfolio's returns were: 10%, 10%, and 16%. Calculate the beta for Stock A.

|  |  |  |
| --- | --- | --- |
|  |  | 1.75 |
|  |  | 1.0 |
|  |  | 0.57 |
|  |  | 0.75 |

0.6757 points

**Question 8**

1. Company A's historical returns for the past three years are: 6.0%, 15%, and 15%. Similarly, the market portfolio's returns were: 10%, 10%, and 16%. Suppose the risk-free rate of return is 4%. What is the cost of equity capital (required rate of return of company A's common stock), computed with the CAPM?

|  |  |  |
| --- | --- | --- |
|  |  | 18% |
|  |  | 14% |
|  |  | 12% |
|  |  | 10% |

0.6757 points

**Question 9**

1. Company A's historical returns for the past three years were: 6%, 15%, and 15%. Similarly, the market portfolio's returns were: 10%, 10%, and 16%. According to the security market line (SML), Stock A was:

|  |  |  |
| --- | --- | --- |
|  |  | overpriced. |
|  |  | underpriced. |
|  |  | correctly priced. |
|  |  | need more information. |

0.6757 points

**Question 10**

1. Cyclical firms tend to have high betas.

True

False

0.6757 points

**Question 11**

1. Firms with high operating leverage tend to have higher asset betas.

True

False

0.6757 points

**Question 12**

1. If a firm uses a project-specific cost of capital for evaluating all projects, which situation(s) will likely occur?I) The firm will accept poor low-risk projects.II) The firm will reject good high-risk projects.III) The firm will correctly accept projects with average risk.

|  |  |  |
| --- | --- | --- |
|  |  | I only |
|  |  | II only |
|  |  | III only |
|  |  | I, II, and III |

0.6757 points

**Question 13**

1. If a firm uses the same company cost of capital for evaluating all projects, which situation(s) will likely occur?I) The firm will reject good low-risk projects;II) The firm will accept poor high-risk projects;III) The firm will correctly accept projects with average risk

|  |  |  |
| --- | --- | --- |
|  |  | I only |
|  |  | I and II only |
|  |  | I, II, and III |
|  |  | II only |