Your business must pay federal income taxes. The tax rate you pay depends on the size and type of your business. Corporations, businesses owned by stockholders, are subject to federal tax rates ranging from 15 percent to 39 percent of taxable income. Taxable income is the portion of your company's gross income that remains after business expenses are deducted. Business expenses include wages, rent, utilities, property taxes, depreciation, and so on.

Find the federal corporate income tax.

High-Tech Electronics had a gross income of $975,000 last year. The company incurred the following business expenses. What federal corporate income taxes must High-Tech pay?

<table>
<thead>
<tr>
<th>Expenses:</th>
<th>Amount</th>
<th>Expenses:</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Insurance</td>
<td>$ 5,750</td>
<td>Rent</td>
<td>$ 15,970</td>
</tr>
<tr>
<td>Depreciation</td>
<td>9,380</td>
<td>Utilities</td>
<td>27,258</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>32,387</td>
<td>Wages</td>
<td>300,626</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>5,750</td>
<td>Total</td>
<td>397,071</td>
</tr>
</tbody>
</table>

1. Find the taxable income.
   **Taxable Income = Annual Gross Income − Deductions**
   
   $975,000 − $397,071 = $577,929 taxable income

2. Use the Federal Corporate Income Tax table on page 182 to find the federal corporate income tax.
   
   $113,900 + 34% of ($577,929 − $335,000) = $196,495.86 income tax

Use the Federal Corporate Income Tax table on page 182 to find the taxable income and the total tax.

<table>
<thead>
<tr>
<th>Annual Gross Income</th>
<th>Deductions</th>
<th>Taxable Income</th>
<th>Total Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $ 125,000</td>
<td>$ 80,000</td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>2. 200,000</td>
<td>137,000</td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>3. 275,000</td>
<td>122,500</td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>4. 75,000,000</td>
<td>62,927,500</td>
<td>a.</td>
<td>b.</td>
</tr>
</tbody>
</table>

5. Standardized Test Practice Neo Standards had a gross income of $18,750,000 and the following business expenses last year. How much federal corporate income tax must Neo Standards pay?

<table>
<thead>
<tr>
<th>Expenses:</th>
<th>Amount</th>
<th>Expenses:</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Business Insurance</td>
<td>$175,000</td>
<td>Rent</td>
<td>$ 67,875</td>
</tr>
<tr>
<td>Depreciation</td>
<td>247,580</td>
<td>Utilities</td>
<td>42,326</td>
</tr>
<tr>
<td>Health Insurance</td>
<td>537,250</td>
<td>Wages</td>
<td>2,995,000</td>
</tr>
<tr>
<td>Office Supplies</td>
<td>31,351</td>
<td>Total</td>
<td>4,096,382</td>
</tr>
</tbody>
</table>

A. $14,653,618  B. $3,400,000  C. $1,628,766.30  D. $5,028,766.30
Calculating Selling Expenses and Net Proceeds from an Issue of Stock and Bonds

Your business may raise money by issuing **stocks** or **bonds**. When you issue stocks or bonds, you must pay certain expenses. One of these expenses is an **underwriting commission**, a commission to the investment banker who helps you distribute the stocks or bonds. Other expenses include accounting costs, legal fees, and printing costs. The amount your business actually receives from the sale of the stocks or bonds after paying these expenses is the **net proceeds**.

**Example**

Find the net proceeds and the cost per share.

To expand its business, High-Tech electronics issues 250,000 shares of stock at a cost of $20 per share. The underwriting commission is 5 percent of the value of the stock. Other expenses of issuing the stock amount to $150,000. If all the shares are sold, what will High-Tech’s proceeds be? What is the cost per share of the selling expenses?

1. Find the value of the stock
   \[250,000 \times 20 = 5,000,000\]

2. Find the underwriting expense.
   \[5\% \times 5,000,000 = 250,000\]

3. Find the net proceeds.
   \[\text{Net Proceeds} = \text{Value of Issue} - \text{Total Selling Expenses}\]
   \[5,000,000 - 250,000 - 150,000 = 4,600,000 \text{ net proceeds}\]

4. Find the cost per share.
   \[\text{Cost per Share} = \frac{\text{Total Selling Expenses}}{\text{Total Number of Shares}}\]
   \[\frac{400,000}{250,000} = 1.60 \text{ per share}\]

**Practice**

Find the commission expense, the total selling expenses, the net proceeds, and the selling cost per share.

<table>
<thead>
<tr>
<th>Value of Issue</th>
<th>Percent</th>
<th>Commission Expenses</th>
<th>Other Expenses</th>
<th>Total Selling Expenses</th>
<th>Net Proceeds</th>
<th>Number of Shares</th>
<th>Selling Cost per Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $1,000,000</td>
<td>6.5%</td>
<td>a.</td>
<td>$50,000</td>
<td>b.</td>
<td>c.</td>
<td>200,000</td>
<td>d.</td>
</tr>
<tr>
<td>2. 750,000</td>
<td>6.0%</td>
<td>a.</td>
<td>30,500</td>
<td>b.</td>
<td>c.</td>
<td>50,000</td>
<td>d.</td>
</tr>
<tr>
<td>3. 10,000,000</td>
<td>7.5%</td>
<td>a.</td>
<td>250,000</td>
<td>b.</td>
<td>c.</td>
<td>500,000</td>
<td>d.</td>
</tr>
<tr>
<td>4. 5,375,000</td>
<td>7.0%</td>
<td>a.</td>
<td>127,595</td>
<td>b.</td>
<td>c.</td>
<td>325,000</td>
<td>d.</td>
</tr>
</tbody>
</table>

5. Consolidated Shippers issued 125,000 shares of stock at a cost of $15 per share. The underwriting commission is 6 percent of the value of the stock. Other expenses amount to $227,500. If all the shares are sold, what are the total selling expenses?

6. **Standardized Test Practice** To expand its business, Neo Standards issues 150,000 shares of stock at a cost of $25 per share. The underwriting commission is 6 percent of the sale. Other expenses amounted to 4 percent of the sale cost. If all of the shares are sold, what were Neo Standards’ net proceeds?
   A. $3,750,000   B. $262,500   C. $3,375,000   D. $3,525,000
Your business may borrow money to buy raw materials, products, or equipment by taking out a **commercial loan**, or business loan. The **maturity value** of your loan is the total amount you must repay. The maturity value includes both the principal borrowed and the interest on the loan. Commercial loans usually charge **ordinary interest at exact time**, that is, your loan term length is calculated by dividing the exact number of days of the loan by 360 days. Commercial loans usually have interest rates that are one to two percentage points higher than the **prime rate**. The prime rate is the lowest rate of interest available to commercial customers at a given time.

**Example**

Find the interest owed and the maturity value.

To expand its business, High-Tech Electronics borrowed $150,000 from National Bank. The bank lent the money at 1 percent above the prime rate of 5.5 percent. The loan is ordinary interest for 120 days. What is the maturity value of the loan?

1. Find the interest owed.
   
   \[
   \text{Interest} = \text{Principal} \times \text{Rate} \times \text{Time} \\
   \$150,000 \times (5.5\% + 1\%) \times \frac{120}{360} \\
   \$150,000 \times 6.5\% \times \frac{1}{3} = $3,250 \text{ interest owed}
   \]

2. Find the maturity value.
   
   \[
   \text{Maturity Value} = \text{Principal} + \text{Interest Owed} \\
   $150,000 + $3,250 = $153,250 \text{ maturity value}
   \]

**Practice**

Find the interest owed and the maturity value using ordinary interest at exact time.

<table>
<thead>
<tr>
<th>Principal</th>
<th>Rate</th>
<th>Time (in days)</th>
<th>Interest Owed</th>
<th>Maturity Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>$75,000</td>
<td>6.000%</td>
<td>150</td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>125,000</td>
<td>6.500%</td>
<td>120</td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>200,750</td>
<td>5.250%</td>
<td>240</td>
<td>a.</td>
<td>b.</td>
</tr>
<tr>
<td>275,389</td>
<td>3.875%</td>
<td>180</td>
<td>a.</td>
<td>b.</td>
</tr>
</tbody>
</table>

5. First United lent Educational Gift Company $185,000 to expand its business. The term of the loan is 240 days. The interest rate is 1.5 percent over prime. If the prime rate is 4.75 percent, what is the maturity value of the loan?

6. **Standardized Test Practice** To expand its business, Neo Standards took out a $200,000 real estate loan with National Bank for 270 days at 2.5 percent above the prime rate of 5.25 percent. It also took out a $50,000 loan with its local bank for 120 days. The local bank charges 1.5 percent above the prime rate of 5.25 percent. What is the total combined interest owed for both loans?

A. $11,625  
B. $12,750  
C. $1,125  
D. $262,750
One way your business can invest its surplus cash is in U.S. Treasury bills, which you can buy through a bank. By buying a Treasury bill, you’re actually lending money to the government. In return, you receive interest at the rate in effect at the time you purchase the bill. The interest is ordinary interest at exact time. Treasury bills are issued on a discount basis, which means the interest is computed and then subtracted from the face value of the bill to determine the cost of the bill. The face value is the amount of money you’ll receive on the maturity date of the bill. Maturity dates for Treasury bills range from 30 days to a year. The yield is the rate of return earned by an investor who holds a bond for a certain period of time.

Find the interest and the yield of a Treasury bill.

High-Tech Electronics invested its surplus cash in a $125,000 U.S. Treasury bill for 180 days. The interest rate is 3.25 percent and the bank charges a $30 service fee to obtain the Treasury bill. What is the cost of the Treasury bill? What is the yield?

1. Find the interest.
   \[
   \text{Interest} = \text{Principal} \times \text{Rate} \times \text{Time}
   \]
   \[
   $125,000 \times 3.25\% \times \frac{180}{360} = \$2,031.25 \text{ interest}
   \]

2. Find the cost of the Treasury bill.
   \[
   \text{Cost of a Treasury Bill} = (\text{Face Value of Bill} - \text{Interest}) + \text{Service Fee}
   \]
   \[
   ($125,000 - \$2,031.25) + \$30 = \$122,998.75 \text{ cost}
   \]

3. Find the yield.
   \[
   \text{Yield} = \frac{\text{Interest}}{(\text{Cost} \times \text{Time})}
   \]
   \[
   \frac{$2,031.25}{($122,998.75 \times \frac{180}{360})} = 3.303\% \text{ yield}
   \]

Find the interest and the cost of the Treasury bill using ordinary interest at exact time.

<table>
<thead>
<tr>
<th>Face Value of Treasury Bill</th>
<th>Interest Rate</th>
<th>Time in Days</th>
<th>Interest</th>
<th>Bank Service Fee</th>
<th>Cost of Treasury Bill</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $100,000</td>
<td>3.250%</td>
<td>60</td>
<td>a.</td>
<td>$30.00</td>
<td>b.</td>
<td>c.</td>
</tr>
<tr>
<td>2. 150,000</td>
<td>2.715%</td>
<td>100</td>
<td>a.</td>
<td>35.00</td>
<td>b.</td>
<td>c.</td>
</tr>
<tr>
<td>3. 200,000</td>
<td>2.850%</td>
<td>125</td>
<td>a.</td>
<td>0.00</td>
<td>b.</td>
<td>c.</td>
</tr>
<tr>
<td>4. 275,000</td>
<td>4.255%</td>
<td>200</td>
<td>a.</td>
<td>27.50</td>
<td>b.</td>
<td>c.</td>
</tr>
</tbody>
</table>

5. Standardized Test Practice
   Neo Standards buys a $200,000 Treasury bill at 4.250 percent for 270 days. It also buys a $50,000 Treasury bill at 3.755 percent for 120 days. If the bank charges a $25 fee per transaction, what is the total combined cost of the two Treasury bills?
   A. $242,999.17    B. $243,049.17    C. $244,234.72    D. $244,236.11
Another way that your business can invest its surplus cash is in **commercial paper (CP)**, which is an unsecured promissory note issued by various companies. When your business invests in CP, you’re actually lending money to another company. Your business usually obtains CP through a bank, which may charge a service fee. Because CP is a discount investment, it’s sold at a price less than its maturity value, that is, the interest is computed and then subtracted from the face value to determine the cost of the CP. The face value of the CP is the amount of money you’ll receive on the maturity date. You can calculate the yield on CP the same way you did for Treasury Bills.

### Find the cost and yield of CP.

High-Tech Electronics invests its surplus cash of $125,000 in CP at 3.10 percent interest for 90 days. The bank charges a $30 service fee to obtain the CP. What is the cost of the CP? What is the yield?

1. Find the interest.
   \[ \text{Interest} = \text{Principal} \times \text{Rate} \times \text{Time} \]
   \[ \$125,000 \times 3.10\% \times \frac{90}{360} = \$968.75 \text{ interest} \]

2. Find the cost of the CP.
   \[ \text{Cost of CP} = (\text{Face Value of CP} - \text{Interest}) + \text{Service Fee} \]
   \[ (\$125,000 - \$968.75) + \$30 = \$124,061.25 \text{ cost} \]

3. Find the yield.
   \[ \text{Yield} = \frac{\text{Interest}}{(\text{Cost} \times \text{Time})} \]
   \[ \$968.75 \div (\$124,061.25 \times \frac{90}{360}) = 3.123\% \text{ yield} \]

### Practice

Find the interest and the cost of CP using ordinary interest at exact time.

<table>
<thead>
<tr>
<th>Face Value of CP</th>
<th>Interest Rate</th>
<th>Time in Days</th>
<th>Interest</th>
<th>Bank Service Fee</th>
<th>Cost of CP</th>
<th>Yield</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. $275,000</td>
<td>2.96%</td>
<td>60</td>
<td>a.</td>
<td>$30.00</td>
<td>b.</td>
<td>c.</td>
</tr>
<tr>
<td>2. 425,000</td>
<td>3.50%</td>
<td>90</td>
<td>a.</td>
<td>35.00</td>
<td>b.</td>
<td>c.</td>
</tr>
<tr>
<td>3. 100,000</td>
<td>3.14%</td>
<td>100</td>
<td>a.</td>
<td>0.00</td>
<td>b.</td>
<td>c.</td>
</tr>
<tr>
<td>4. 75,000</td>
<td>4.25%</td>
<td>125</td>
<td>a.</td>
<td>27.50</td>
<td>b.</td>
<td>c.</td>
</tr>
</tbody>
</table>

5. Consolidated Shippers purchased $250,000 of CP at 4.15 percent interest for 200 days. The bank charged a $25 service fee. What was the cost and yield of the CP?
6. Educational Gift Company purchased $185,000 of CP at 4.95 percent ordinary interest for 100 days. The bank charged a $30 service fee. What is the yield on the Treasury bill?
   A. 5.018%  B. 4.649%  C. 4.957%  D. 4.95%
There are many ways to expand your business. You might buy a new building or buy another business to become part of your own. Your business may merge, or combine, with another business to form a new business. Growth expenses for your business may include construction fees, consultation fees, legal fees, and so on.

**Example**

Find the total cost of expansion.

High-Tech Electronics wants to expand into video games. To conduct a survey of the market potential, it hires a marketing consultant at $45 per hour for 10 hours, plus $10 for each of 125 survey participants. High-Tech also buys warehouse space measuring 16 feet by 20 feet at a cost of $12 per square foot. If other expenses for the expansion total $7,500, what is High-Tech’s total expansion cost?

1. Find the marketing consultant fees. 
   \((45 \times 10) + (10 \times 125) = 1,700\)
2. Find the warehouse cost. 
   \(12 \times 320 = 3,840\)
3. Find the total cost of expansion.
   \(Total\ Cost\ of\ Expansion = Sum\ of\ Individual\ Costs\)
   
   \(1,700 + 3,840 + 7,500 = 13,040\ total\ cost\ of\ expansion\)

**Practice**

For Problems 1–3, use the growth expenses below to find the individual costs and the total cost for expansion.

<table>
<thead>
<tr>
<th>Building Costs:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>$100,000</td>
</tr>
<tr>
<td>Survey</td>
<td>$5,600</td>
</tr>
<tr>
<td>Construction</td>
<td>25 ft (\times) 40 ft at $20/sq ft</td>
</tr>
<tr>
<td>Architect’s Fee</td>
<td>7.5% of construction cost</td>
</tr>
<tr>
<td>Legal Fees</td>
<td>$10,000</td>
</tr>
</tbody>
</table>

1. What are the total buildings costs?
2. What is the architect’s fee?
3. What is the total cost of expansion?
4. To expand its warehouse, Consolidated Shippers hires a contractor at $50 per hour for 65 hours of work. The new warehouse measures 40 feet by 50 feet and costs $7.50 per square foot to build. What is the total expansion cost?
5. **Standardized Test Practice** Neo Standards wants to build a new store. It hires an attorney at $80 per hour for 30 hours of consultation. The land costs $35,000. The new building will be 50 feet by 50 feet and will cost $25 per square foot to build. The architect charges 7 percent of the combined cost of the building and the land. What is Neo Standards’ total expansion cost?
   
   A. $99,900   B. $102,350   C. $104,275   D. $106,725
Financial Management Cryptogram

Unscramble the following words that you learned in this chapter by placing one letter on each line. Then use the numbered lines to complete the answer to the riddle at the end of the sheet.

1. CRPOROETA
   1234567890

2. AATELBX
   1234567

3. NIEUSTODCD
   8

4. SROSG
   4

5. SEOEDCPR
   1234567890

6. SAEHSR
   2

7. ETENIRS
   6

8. YTIUMRTA
   5

9. AENOIPXNS
   3

RIDDLE:
What do you call a great financial road sign?

10. ANSWER:
    12345678