11-1B Lesson Master

**SKILLS** Objective A

In 1–10, simplify the expression.

1. \((3a^2 + 7a - 5) + (2a^2 - 5a + 1)\)

2. \((39b - 28b^2) + (11b^2 - 13b)\)

3. \((9c^2 - 10c) - 3(5c^2 + 7)\)

4. \((d^2 + 2d) - (3d^2 + 3)\)

5. \((11e^3 + 7e) + (32e^2 - 24e)\)

6. \((6x^3 + 4x + 15) - (3x^3 + x^2 - 7)\)

7. \((2x^3 + 16x^2) + (x^2 - 3x^2)\)

8. \((8y^2 - 9y - 5) + (-5y + 1)\)

9. \((-3w^3 - 12) + (w^3 - w)\)

10. \((10g^3 - g + 22) - (12g^3 + 2g^2)\)

In 11 and 12, solve the equation.

11. \((4x^2 - 5x - 12) - (3x^2 + 2x - 24) = 0\)

12. \((5g^2 + 4g - 35) - (4g^2 + 6g) = 0\)

13. *Multiple Choice.* \(m^7 + m^3 + m = \) __________

   A. \(3m^{11}\)  B. \(m^{10}\)  C. \(3m^{21}\)  D. none of these

In 14 and 15, find the missing polynomial.

14. \((53j^2 + 7j - 21) + (\text{_____________}) = (60j^2 + 7j - 30)\)

15. \((72k^3 + 16k^2 - 6k + 5) - (\text{_____________}) = 62k^3 + 16k^2 - 13k + 2\)

**USES** Objective F

In 16 and 17, write a polynomial to represent the total dollar amount of each investment that earns interest at a scale factor of \(x\).

16. Lora deposits $560 a year into her college tuition account for 6 years.

17. Lora deposits $600 a year into her college tuition account for 5 years.

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18. On January 1, 2006, Abigail opened a bank account and began saving for a down payment on her next car. The account pays a 5% annual yield. Abigail will deposit $800 on January 1 each year.

a. The table shows how much Abigail has in the account the first two years on January 1. What is the value of \( x \) in the chart?

<table>
<thead>
<tr>
<th>Year</th>
<th>Amount on January 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008</td>
<td>800</td>
</tr>
<tr>
<td>2009</td>
<td>800x + 800</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

b. Complete the table and find how much money Abigail will have on January 1 of each year.

<table>
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<td>2010</td>
<td></td>
</tr>
<tr>
<td>2011</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
</tr>
</tbody>
</table>

19. Brant receives a bonus check at the end of every year that represents the success of his company’s sales. In 2008 his check was $1,500, in 2009 it was $1,700, in 2010 it was $1,600 and in 2011 it was $2,000. Each time he invested his bonus checks he added an additional $500.

a. Write a polynomial representing his total investments by the end of 2011.

b. Brant is planning a trip to Europe that will cost $10,000. If his total investments have earned interest at a rate of 7%, has he made enough money at the end of 2011 to go on his trip? Explain.