

Standard: A.SSE.A.2 – All Factoring Review

<p>1. The expression <math>x^2 - 10x + 24</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) <math>(x + 12)(x - 2)</math></li> <li>2) <math>(x - 12)(x + 2)</math></li> <li>3) <math>(x + 6)(x + 4)</math></li> <li>4) <math>(x - 6)(x - 4)</math></li> </ol>	<p>2. Which expression is <i>not</i> equivalent to <math>2x^2 + 10x + 12</math>?</p> <ol style="list-style-type: none"> <li>1) <math>(2x + 4)(x + 3)</math></li> <li>2) <math>(2x + 6)(x + 2)</math></li> <li>3) <math>(2x + 3)(x + 4)</math></li> <li>4) <math>2(x + 3)(x + 2)</math></li> </ol>
<p>3. Which expression is equivalent to <math>x^4 - 12x^2 + 36</math>?</p> <ol style="list-style-type: none"> <li>1) <math>(x^2 - 6)(x^2 - 6)</math></li> <li>2) <math>(x^2 + 6)(x^2 + 6)</math></li> <li>3) <math>(6 - x^2)(6 + x^2)</math></li> <li>4) <math>(x^2 + 6)(x^2 - 6)</math></li> </ol>	<p>4. When factored completely, <math>x^3 - 13x^2 - 30x</math> is</p> <ol style="list-style-type: none"> <li>1) <math>x(x + 3)(x - 10)</math></li> <li>2) <math>x(x - 3)(x - 10)</math></li> <li>3) <math>x(x + 2)(x - 15)</math></li> <li>4) <math>x(x - 2)(x + 15)</math></li> </ol>
<p>5. The area of a rectangle is represented by <math>3x^2 - 10x - 8</math>. Which expression can also be used to represent the area of the same rectangle?</p> <ol style="list-style-type: none"> <li>1) <math>(3x + 2)(x - 4)</math></li> <li>2) <math>(3x + 2)(x + 4)</math></li> <li>3) <math>(3x + 4)(x - 2)</math></li> <li>4) <math>(3x - 4)(x + 2)</math></li> </ol>	<p>6. Four expressions are shown below.</p> <p style="margin-left: 40px;">I <math>2(2x^2 - 2x - 60)</math>          II <math>4(x^2 - x - 30)</math>          III <math>4(x + 6)(x - 5)</math>          IV <math>4x(x - 1) - 120</math></p> <p>The expression <math>4x^2 - 4x - 120</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) I and II, only</li> <li>2) II and IV, only</li> <li>3) I, II, and IV</li> <li>4) II, III, and IV</li> </ol>
<p>7. <math>2x^3 + 2x^2 + 8x</math></p> <p>[A] <math>2x(x^2 + x + 4)</math>      [B] <math>2x(x + 1)(x + 4)</math>          [C] <math>2(x^3 + x^2 + 4x)</math>      [D] <math>x(2x^2 + 2x + 8)</math></p>	<p>8. <math>9x^2 - 21x^5</math></p> <p>[A] <math>3(3x^2 - 7x^5)</math>      [B] <math>x^2(9 - 21x^3)</math>          [C] <math>3x^2(3 - 7x^3)</math>      [D] <math>3x(3x - 7x^4)</math></p>
<p>9. Jim has a data set of 4 numbers. The sum of the numbers is <math>36x^2 + 4</math>. If all 4 numbers are the same, what polynomial describes each number?</p>	<p>10. The expression <math>x^4 - 16</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) <math>(x^2 + 8)(x^2 - 8)</math></li> <li>2) <math>(x^2 - 8)(x^2 - 8)</math></li> <li>3) <math>(x^2 + 4)(x^2 - 4)</math></li> <li>4) <math>(x^2 - 4)(x^2 - 4)</math></li> </ol>
<p>11. Which expression is equivalent to <math>16x^4 - 64</math>?</p> <ol style="list-style-type: none"> <li>1) <math>(4x^2 - 8)^2</math></li> <li>2) <math>(8x^2 - 32)^2</math></li> <li>3) <math>(4x^2 + 8)(4x^2 - 8)</math></li> <li>4) <math>(8x^2 + 32)(8x^2 - 32)</math></li> </ol>	<p>12. When <math>a^3 - 4a</math> is factored completely, the result is</p> <ol style="list-style-type: none"> <li>1) <math>(a - 2)(a + 2)</math></li> <li>2) <math>a(a - 2)(a + 2)</math></li> <li>3) <math>a^2(a - 4)</math></li> <li>4) <math>a(a - 2)^2</math></li> </ol>

<p>13.</p> <p>When factored completely, the expression <math>p^4 - 81</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) <math>(p^2 + 9)(p^2 - 9)</math></li> <li>2) <math>(p^2 - 9)(p^2 - 9)</math></li> <li>3) <math>(p^2 + 9)(p + 3)(p - 3)</math></li> <li>4) <math>(p + 3)(p - 3)(p + 3)(p - 3)</math></li> </ol>	<p>14.</p> <p>When factored completely, <math>x^4 - 13x^2 + 36</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) <math>(x^2 - 6)(x^2 - 6)</math></li> <li>2) <math>(x^2 - 4)(x^2 - 9)</math></li> <li>3) <math>(x - 2)(x - 2)(x - 3)(x - 3)</math></li> <li>4) <math>(x - 2)(x + 2)(x - 3)(x + 3)</math></li> </ol>
<p>15.</p> <p>When factored completely, <math>x^3 + 3x^2 - 4x - 12</math> equals</p> <ol style="list-style-type: none"> <li>1) <math>(x + 2)(x - 2)(x - 3)</math></li> <li>2) <math>(x + 2)(x - 2)(x + 3)</math></li> <li>3) <math>(x^2 - 4)(x + 3)</math></li> <li>4) <math>(x^2 - 4)(x - 3)</math></li> </ol>	<p>16.</p> <p>When factored completely, the expression <math>x^3 - 2x^2 - 9x + 18</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) <math>(x^2 - 9)(x - 2)</math></li> <li>2) <math>(x - 2)(x - 3)(x + 3)</math></li> <li>3) <math>(x - 2)^2(x - 3)(x + 3)</math></li> <li>4) <math>(x - 3)^2(x - 2)</math></li> </ol>
<p>17.</p> <p>When factored completely, the expression <math>3x^3 - 5x^2 - 48x + 80</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) <math>(x^2 - 16)(3x - 5)</math></li> <li>2) <math>(x^2 + 16)(3x - 5)(3x + 5)</math></li> <li>3) <math>(x + 4)(x - 4)(3x - 5)</math></li> <li>4) <math>(x + 4)(x - 4)(3x - 5)(3x - 5)</math></li> </ol>	<p>18.</p> <p>The expression <math>x^2(x + 2) - (x + 2)</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) <math>x^2</math></li> <li>2) <math>x^2 - 1</math></li> <li>3) <math>x^3 + 2x^2 - x + 2</math></li> <li>4) <math>(x + 1)(x - 1)(x + 2)</math></li> </ol>
<p>19.</p> <p>Which factorization is <i>incorrect</i>?</p> <ol style="list-style-type: none"> <li>1) <math>4k^2 - 49 = (2k + 7)(2k - 7)</math></li> <li>2) <math>a^3 - 8b^3 = (a - 2b)(a^2 + 2ab + 4b^2)</math></li> <li>3) <math>m^3 + 3m^2 - 4m + 12 = (m - 2)^2(m + 3)</math></li> <li>4) <math>t^3 + 5t^2 + 6t + t^2 + 5t + 6 = (t + 1)(t + 2)(t + 3)</math></li> </ol>	<p>20.</p> <p>The greatest common factor of <math>3m^2n + 12mn^2</math> is?</p> <ol style="list-style-type: none"> <li>1) <math>3n</math></li> <li>2) <math>3m</math></li> <li>3) <math>3mn</math></li> <li>4) <math>3mn^2</math></li> </ol>
<p>21.</p> <p>The greatest common factor of <math>4a^2b</math> and <math>6ab^3</math> is</p> <ol style="list-style-type: none"> <li>1) <math>2ab</math></li> <li>2) <math>2ab^2</math></li> <li>3) <math>12ab</math></li> <li>4) <math>24a^3b^4</math></li> </ol>	<p>22.</p> <p>Which expression represents <math>36x^2 - 100y^6</math> factored completely?</p> <ol style="list-style-type: none"> <li>1) <math>2(9x + 25y^3)(9x - 25y^3)</math></li> <li>2) <math>4(3x + 5y^3)(3x - 5y^3)</math></li> <li>3) <math>(6x + 10y^3)(6x - 10y^3)</math></li> <li>4) <math>(18x + 50y^3)(18x - 50y^3)</math></li> </ol>
<p>23.</p> <p>If <math>(a^3 + 27) = (a + 3)(a^2 + ma + 9)</math>, then <math>m</math> equals</p> <ol style="list-style-type: none"> <li>1) <math>-9</math></li> <li>2) <math>-3</math></li> <li>3) <math>3</math></li> <li>4) <math>6</math></li> </ol>	<p>24.</p> <p>Factored completely, <math>m^5 + m^3 - 6m</math> is equivalent to</p> <ol style="list-style-type: none"> <li>1) <math>(m + 3)(m - 2)</math></li> <li>2) <math>(m^2 + 3m)(m^2 - 2)</math></li> <li>3) <math>m(m^4 + m^2 - 6)</math></li> <li>4) <math>m(m^2 + 3)(m^2 - 2)</math></li> </ol>