

Utilizing the Explicit Formula – Day 3
Unit 6: Representations of Linear Relations

For each of the following find the explicit formula and...

- A. Identify the next three terms
B. Find the term named in the problem
C. Find the 52nd term.

<p>1. 21, 1, -19, -39, ... Find a_{23}</p> <p><u>Explicit Formula</u></p> <p>$d = -20$</p> <p>$a_n = -20n + 41$</p> <p>$a_5 = -39 - 20 = -59$ $a_6 = -59 - 20 = -79$ $a_7 = -79 - 20 = -99$</p> <p>$a_{23} = -419$ $a_{52} = -999$</p>	<p>2. 8, 4, 0, -4, ... Find a_{20}</p> <p><u>Explicit Formula</u></p> <p>$d = -4$</p> <p>$a_n = -4n + 12$</p> <p>$a_5 = -4 - 4 = -8$ $a_6 = -8 - 4 = -12$ $a_7 = -12 - 4 = -16$</p> <p>$a_{20} = -68$ $a_{52} = -196$</p>
<p>3. 0, -200, -400, -600, ... Find a_{38}</p> <p><u>Explicit Formula</u></p> <p>$d = -200$</p> <p>$a_n = -200n + 200$</p> <p>$a_5 = -600 - 200 = -800$ $a_6 = -800 - 200 = -1000$ $a_7 = -1000 - 200 = -1200$</p> <p>$a_{38} = -7400$ $a_{52} = -10200$</p>	<p>4. -10, 190, 390, 590, ... Find a_{29}</p> <p><u>Explicit Formula</u></p> <p>$d = 200$</p> <p>$a_n = 200n - 210$</p> <p>$a_5 = 590 + 200 = 790$ $a_6 = 790 + 200 = 990$ $a_7 = 990 + 200 = 1190$</p> <p>$a_{29} = 5590$ $a_{52} = 10190$</p>
<p>5. 8, -12, -32, -52, ... Find a_{25}</p> <p><u>Explicit Formula</u></p> <p>$d = -20$</p> <p>$a_n = -20n + 28$</p> <p>$a_5 = -52 - 20 = -72$ $a_6 = -72 - 20 = -92$ $a_7 = -92 - 20 = -112$</p> <p>$a_{25} = -472$ $a_{52} = -1012$</p>	<p>6. 31, 51, 71, 91, ... Find a_{39}</p> <p><u>Explicit Formula</u></p> <p>$d = 20$</p> <p>$a_n = 20n + 11$</p> <p>$a_5 = 91 + 20 = 111$ $a_6 = 111 + 20 = 131$ $a_7 = 131 + 20 = 151$</p> <p>$a_{39} = 791$ $a_{52} = 1051$</p>
<p>7. -7, -2, 3, 8, ... Find a_{34}</p> <p><u>Explicit Formula</u></p> <p>$d = 5$</p> <p>$a_n = 5n - 12$</p> <p>$a_5 = 8 + 5 = 13$ $a_6 = 13 + 5 = 18$ $a_7 = 18 + 5 = 23$</p> <p>$a_{34} = 158$ $a_{52} = 248$</p>	<p>8. 13, -187, -387, -587, ... Find a_{31}</p> <p><u>Explicit Formula</u></p> <p>$d = -200$</p> <p>$a_n = -200n + 213$</p> <p>$a_5 = -587 - 200 = -787$ $a_6 = -787 - 200 = -987$ $a_7 = -987 - 200 = -1187$</p> <p>$a_{31} = -5987$ $a_{52} = -10187$</p>
<p>9. 1, -3, -7, -11, ... Find a_{27}</p> <p><u>Explicit Formula</u></p> <p>$d = -4$</p> <p>$a_n = -4n + 5$</p> <p>$a_5 = -11 - 4 = -15$ $a_6 = -15 - 4 = -19$ $a_7 = -19 - 4 = -23$</p> <p>$a_{27} = -103$ $a_{52} = -203$</p>	<p>10. 31, 26, 21, 16, ... Find a_{29}</p> <p><u>Explicit Formula</u></p> <p>$d = -5$</p> <p>$a_n = -5n + 36$</p> <p>$a_5 = 16 - 5 = 11$ $a_6 = 11 - 5 = 6$ $a_7 = 6 - 5 = 1$</p> <p>$a_{29} = -109$ $a_{52} = -224$</p>

<p>11. $-9, -4, 1, 6, \dots$ Find a_{31}</p> <p><u>Explicit Formula</u></p> <p>$d = 5$</p> <p>$a_n = 5n - 14$</p> <p>$a_5 = 6 + 5 = 11$</p> <p>$a_6 = 11 + 5 = 16$</p> <p>$a_7 = 16 + 5 = 21$</p> <p>$a_{31} = 141$</p> <p>$a_{52} = 246$</p>	<p>12. $4, -4, -12, -20, \dots$ Find a_{34}</p> <p><u>Explicit Formula</u></p> <p>$d = -8$</p> <p>$a_n = -8n + 12$</p> <p>$a_5 = -20 - 8 = -28$</p> <p>$a_6 = -28 - 8 = -36$</p> <p>$a_7 = -36 - 8 = -44$</p> <p>$a_{34} = -260$</p> <p>$a_{52} = -404$</p>
<p>13. $-1, 19, 39, 59, \dots$ Find a_{40}</p> <p><u>Explicit Formula</u></p> <p>$d = 20$</p> <p>$a_n = 20n - 21$</p> <p>$a_5 = 59 + 20 = 79$</p> <p>$a_6 = 79 + 20 = 99$</p> <p>$a_7 = 99 + 20 = 119$</p> <p>$a_{40} = 779$</p> <p>$a_{52} = 1019$</p>	<p>14. $26, 6, -14, -34, \dots$ Find a_{32}</p> <p><u>Explicit Formula</u></p> <p>$d = -20$</p> <p>$a_n = -20n + 46$</p> <p>$a_5 = -34 - 20 = -54$</p> <p>$a_6 = -54 - 20 = -74$</p> <p>$a_7 = -74 - 20 = -94$</p> <p>$a_{32} = -594$</p> <p>$a_{52} = -994$</p>
<p>15. $-26, 174, 374, 574, \dots$ Find a_{25}</p> <p><u>Explicit Formula</u></p> <p>$d = 200$</p> <p>$a_n = 200n - 226$</p> <p>$a_5 = 574 + 200 = 774$</p> <p>$a_6 = 774 + 200 = 974$</p> <p>$a_7 = 974 + 200 = 1174$</p> <p>$a_{25} = 4774$</p> <p>$a_{52} = 10174$</p>	<p>16. $-1, -6, -11, -16, \dots$ Find a_{37}</p> <p><u>Explicit Formula</u></p> <p>$d = -5$</p> <p>$a_n = -5n + 4$</p> <p>$a_5 = -16 - 5 = -21$</p> <p>$a_6 = -21 - 5 = -26$</p> <p>$a_7 = -26 - 5 = -31$</p> <p>$a_{37} = -181$</p> <p>$a_{52} = -256$</p>
<p>17. $-14, -214, -414, -614, \dots$ Find a_{28}</p> <p><u>Explicit Formula</u></p> <p>$d = -200$</p> <p>$a_n = -200n + 186$</p> <p>$a_5 = -614 - 200 = -814$</p> <p>$a_6 = -814 - 200 = -1014$</p> <p>$a_7 = -1014 - 200 = -1214$</p> <p>$a_{28} = -5414$</p> <p>$a_{52} = -10214$</p>	<p>18. $-34, -14, 6, 26, \dots$ Find a_{40}</p> <p><u>Explicit Formula</u></p> <p>$d = 20$</p> <p>$a_n = 20n - 54$</p> <p>$a_5 = 26 + 20 = 46$</p> <p>$a_6 = 46 + 20 = 66$</p> <p>$a_7 = 66 + 20 = 86$</p> <p>$a_{40} = 746$</p> <p>$a_{52} = 986$</p>
<p>19. $19, 22, 25, 28, \dots$ Find a_{36}</p> <p><u>Explicit Formula</u></p> <p>$d = 3$</p> <p>$a_n = 3n + 16$</p> <p>$a_5 = 28 + 3 = 31$</p> <p>$a_6 = 31 + 3 = 34$</p> <p>$a_7 = 34 + 3 = 37$</p> <p>$a_{36} = 124$</p> <p>$a_{52} = 172$</p>	<p>20. $-13, -3, 7, 17, \dots$ Find a_{34}</p> <p><u>Explicit Formula</u></p> <p>$d = 10$</p> <p>$a_n = 10n - 23$</p> <p>$a_5 = 17 + 10 = 27$</p> <p>$a_6 = 27 + 10 = 37$</p> <p>$a_7 = 37 + 10 = 47$</p> <p>$a_{34} = 317$</p> <p>$a_{52} = 497$</p>