

Utilizing the Explicit Formula – Day 2
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. 38, 43, 48, 53, ... Find a_{22}</p> <p><u>Explicit Formula:</u> $a_n = 5n + 33$</p> <p>$d = 5$</p> <p>$a_5 = 53 + 5 = 58$ $a_6 = 58 + 5 = 63$ $a_7 = 63 + 5 = 68$</p> <p>$a_{22} = 143$ $a_{52} = 293$</p>	<p>2. -32, -35, -38, -41, ... Find a_{20}</p> <p><u>Explicit Formula:</u> $a_n = -3n - 29$</p> <p>$d = -3$</p> <p>$a_5 = -41 - 3 = -44$ $a_6 = -44 - 3 = -47$ $a_7 = -47 - 3 = -50$</p> <p>$a_{20} = -89$ $a_{52} = 785$</p>
<p>3. 38, 45, 52, 59, ... Find a_{31}</p> <p><u>Explicit Formula:</u> $a_n = 7n + 31$</p> <p>$d = 7$</p> <p>$a_5 = 59 + 7 = 66$ $a_6 = 66 + 7 = 73$ $a_7 = 73 + 7 = 80$</p> <p>$a_{31} = 248$ $a_{52} = 395$</p>	<p>4. 8, 38, 68, 98, ... Find a_{38}</p> <p><u>Explicit Formula:</u> $a_n = 30n - 22$</p> <p>$d = 30$</p> <p>$a_5 = 98 + 30 = 128$ $a_6 = 128 + 30 = 158$ $a_7 = 158 + 30 = 188$</p> <p>$a_{38} = 1118$ $a_{52} = 1538$</p>
<p>5. -21, -18, -15, -12, ... Find a_{24}</p> <p><u>Explicit Formula:</u> $a_n = 3n - 24$</p> <p>$d = 3$</p> <p>$a_5 = -12 + 3 = -9$ $a_6 = -9 + 3 = -6$ $a_7 = -6 + 3 = -3$</p> <p>$a_{24} = 48$ $a_{52} = 132$</p>	<p>6. 4, 14, 24, 34, ... Find a_{30}</p> <p><u>Explicit Formula:</u> $a_n = 10n - 6$</p> <p>$d = 10$</p> <p>$a_5 = 34 + 10 = 44$ $a_6 = 44 + 10 = 54$ $a_7 = 54 + 10 = 64$</p> <p>$a_{30} = 294$ $a_{52} = 514$</p>
<p>7. -28, -18, -8, 2, ... Find a_{28}</p> <p><u>Explicit Formula:</u> $a_n = 10n - 38$</p> <p>$d = 10$</p> <p>$a_5 = 2 + 10 = 12$ $a_6 = 12 + 10 = 22$ $a_7 = 22 + 10 = 32$</p> <p>$a_{28} = 242$ $a_{52} = 482$</p>	<p>8. -39, -34, -29, -24, ... Find a_{33}</p> <p><u>Explicit Formula:</u> $a_n = 5n - 44$</p> <p>$d = 5$</p> <p>$a_5 = -24 + 5 = -19$ $a_6 = -19 + 5 = -14$ $a_7 = -14 + 5 = -9$</p> <p>$a_{33} = 121$ $a_{52} = 216$</p>
<p>9. -30, 70, 170, 270, ... Find a_{38}</p> <p><u>Explicit Formula:</u> $a_n = 100n - 130$</p> <p>$d = 100$</p> <p>$a_5 = 270 + 100 = 370$ $a_6 = 370 + 100 = 470$ $a_7 = 470 + 100 = 570$</p> <p>$a_{38} = 3670$ $a_{52} = 5070$</p>	<p>10. -22, -29, -36, -43, ... Find a_{35}</p> <p><u>Explicit Formula:</u> $a_n = -7n - 15$</p> <p>$d = -7$</p> <p>$a_5 = -43 - 7 = -50$ $a_6 = -50 - 7 = -57$ $a_7 = -57 - 7 = -64$</p> <p>$a_{35} = -260$ $a_{52} = -379$</p>

<p>11. -22, -222, -422, -622, ... <u>Explicit Formula</u> Find a_{34}</p> <p>$d = -200$</p> <p>$a_n = -200n + 178$</p> <p>$a_5 = -622 - 200 = -822$</p> <p>$a_6 = -822 - 200 = -1022$</p> <p>$a_7 = -1022 - 200 = -1222$</p> <p>$a_{34} = -6622$</p> <p>$a_{52} = -10222$</p>	<p>12. 17, 37, 57, 77, ... <u>Explicit Formula</u> Find a_{21}</p> <p>$d = 20$</p> <p>$a_n = 20n - 3$</p> <p>$a_5 = 77 + 20 = 97$</p> <p>$a_6 = 97 + 20 = 117$</p> <p>$a_7 = 117 + 20 = 137$</p> <p>$a_{21} = 417$</p> <p>$a_{52} = 1037$</p>
<p>13. 24, 20, 16, 12, ... <u>Explicit Formula</u> Find a_{27}</p> <p>$d = -4$</p> <p>$a_n = -4n + 28$</p> <p>$a_5 = 12 - 4 = 8$</p> <p>$a_6 = 8 - 4 = 4$</p> <p>$a_7 = 4 - 4 = 0$</p> <p>$a_{27} = -80$</p> <p>$a_{52} = -180$</p>	<p>14. -5, -105, -205, -305, ... <u>Explicit Formula</u> Find a_{20}</p> <p>$d = -100$</p> <p>$a_n = -100n + 95$</p> <p>$a_5 = -305 - 100 = -405$</p> <p>$a_6 = -405 - 100 = -505$</p> <p>$a_7 = -505 - 100 = -605$</p> <p>$a_{20} = -1905$</p> <p>$a_{52} = -5105$</p>
<p>15. 11, 15, 19, 23, ... <u>Explicit Formula</u> Find a_{38}</p> <p>$d = 4$</p> <p>$a_n = 4n + 7$</p> <p>$a_5 = 23 + 4 = 27$</p> <p>$a_6 = 27 + 4 = 31$</p> <p>$a_7 = 31 + 4 = 35$</p> <p>$a_{38} = 159$</p> <p>$a_{52} = 215$</p>	<p>16. -1, -101, -201, -301, ... <u>Explicit Formula</u> Find a_{29}</p> <p>$d = -100$</p> <p>$a_n = -100n + 99$</p> <p>$a_5 = -301 - 100 = -401$</p> <p>$a_6 = -401 - 100 = -501$</p> <p>$a_7 = -501 - 100 = -601$</p> <p>$a_{29} = -2801$</p> <p>$a_{52} = -5101$</p>
<p>17. -40, -20, 0, 20, ... <u>Explicit Formula</u> Find a_{40}</p> <p>$d = 20$</p> <p>$a_n = 20n - 60$</p> <p>$a_5 = 20 + 20 = 40$</p> <p>$a_6 = 40 + 20 = 60$</p> <p>$a_7 = 60 + 20 = 80$</p> <p>$a_{40} = 740$</p> <p>$a_{52} = 980$</p>	<p>18. 14, 114, 214, 314, ... <u>Explicit Formula</u> Find a_{32}</p> <p>$d = 100$</p> <p>$a_n = 100n - 86$</p> <p>$a_5 = 314 + 100 = 414$</p> <p>$a_6 = 414 + 100 = 514$</p> <p>$a_7 = 514 + 100 = 614$</p> <p>$a_{32} = 3114$</p> <p>$a_{52} = 5114$</p>
<p>19. 18, 9, 0, -9, ... <u>Explicit Formula</u> Find a_{21}</p> <p>$d = -9$</p> <p>$a_n = -9n + 27$</p> <p>$a_5 = -9 - 9 = -18$</p> <p>$a_6 = -18 - 9 = -27$</p> <p>$a_7 = -27 - 9 = -36$</p> <p>$a_{21} = -162$</p> <p>$a_{52} = -441$</p>	<p>20. -35, -30, -25, -20, ... <u>Explicit Formula</u> Find a_{28}</p> <p>$d = 5$</p> <p>$a_n = 5n - 40$</p> <p>$a_5 = -20 + 5 = -15$</p> <p>$a_6 = -15 + 5 = -10$</p> <p>$a_7 = -10 + 5 = -5$</p> <p>$a_{28} = 100$</p> <p>$a_{52} = 220$</p>