Transuranic Elementary Equations

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In the November 2015 edition of Word Ways, Susan Thorpe offered her Elementary Equations article. The letter values A=1, B=2, ... Z=26 were assigned to the letters in each element's name, and the values in order were then mathematically manipulated (using just the + - X / and √ functions) such that the calculated result was equal to the element's atomic number. Susan gave examples for the elements with atomic numbers 1-92, with six gaps for TIN, LEAD, GOLD, RADON, XENON and ZINC. A solution for ZINC (atomic number 30) was given in Colloquy in February 2016 – thus, √(-26+(9x14))x3

My good friend Chris Hawkins and his mathematical colleagues Holly Adams and Diane Kendrick (all from Cambridgeshire, England) have now managed to find solutions for all the transuranic elements, those with atomic numbers 93 to 118. Here are their solutions:

93	**NEPTUNIUM**	**14+5+16-20+21+14+9+21+13**
94	**PLUTONIUM**	**16+12-21+20+15x(14-9)-21+13**
95	**AMERICIUM**	**-1+13-5+18+(9x3)+9+21+13**
96	**CURIUM**	**3+21+(18-9)x(21-13)**
97	**BERKELIUM**	**2+5+18+11+(5x12) +9-21+13**
98	**CALIFORNIUM**	**3-1+12+(9x6)+15+18+14-9-21+13**
99	**EINSTEINIUM**	**(5x9)+14+19+20+5+9-14+9-21+13**
100	**FERMIUM**	**6+(5x18)-13+9+21-13**
101	**MENDELEVIUM**	**13+5+(14x4)+5+12+5+22-9-21+13**
102	**NOBELIUM**	**-14+15-2+(5x12)+9+21+13**
103	**LAWRENCIUM**	**12+1+23+18-5+14-3+9+21+13**
104	**RUTHERFORDIUM**	**18-21+20+8+5+18+6-15+18+4+9+21+13**
105	**DUBNIUM**	**(4x21)-(2x14x9)+(21x13)**
106	**SEABORGIUM**	**19+5+1-2+15+18+7+9+21+13**
107	**BOHRIUM**	**2-15-8+(18x9)-21-13**
108	**HASSIUM**	**(8x1x19)-19+9-21-13**

109	MEITNERIUM	13+5-9+20+14+5+18+9+21+13
110	DARMSTADTIUM	(4x1x18)+13+19-20-1+4-20+9+21+13
111	ROENTGENIUM	18-15+5+14+20+7+5+14+9+21+13
112	COPERNICIUM	-3+(15x16)-5-18-14-((9-3)x9)-21-13
113	NIHONIUM	((14x√9)+8-15+14)x√9-21-13
114	FLEROVIUM	6+12+(5x18)-15-22+9+21+13
115	MOSCOVIUM	13+15+19+3+15-22+9x(21-13)
116	LIVERMORIUM	(12x9)-22-5-18+13+15-18+9+21+13
117	TENNESSINE	-20+5+14+(14x5)+19+19-9+14+5
118	OGANESSON	15-7+1+(14x5)+19+19+15-14

Can Word Ways readers find alternatives for any of these? And, of course, it would be nice to conquer the five missing elements TIN, LEAD, GOLD, RADON and XENON.