Enrichment 5-6

Mystery Mathematician

This mystery mathematician is best known as an inventor. He designed and built a variety of mechanical computing machines that operated on essentially the same principles as today's computers. To discover his identity, fill in the puzzle below.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Perform each of the calculations in Exercises 1–15. Then start from the square marked **. If the result of a calculation is a real number r, move r spaces to the right if r is positive; move r spaces to the left if r is negative. If the result is an imaginary number ai, move a squares up if a is positive; move a squares down if a is negative. After each move, write the letter in its place in the puzzle and continue moving from that square.

R		Т	G	Н		A	I	V	О
W	С	A		A	В	L	N	Н	Y
Н	Y		Z	Q	В	N	L	Z	A
L	С	В		R	A	R	R	Е	
О	R	I	X	U		J	M	О	Т
	V		A		**	R		С	X
N	K	A		U	L	Е			G
R	A		W	О	K	N		S	U
W	A		S		Y		Т	R	
T	R		K		S	I	В	S	M

1.
$$\frac{\sqrt{-36}}{\sqrt{-4}}$$

4.
$$(3 + i) + (-3 - 3i)$$

10.
$$\sqrt{-25} - \sqrt{-9}$$

13.
$$-i\sqrt{-16}$$

2.
$$-\frac{16}{2\sqrt{-4}}$$

5.
$$i\sqrt{-16}$$

5.
$$l \vee -10$$

8.
$$2i - (6 + 2i)$$

11.
$$5i^2 - 8i^2$$

14.
$$i^2(4i)$$

3.
$$-\frac{2\sqrt{-64}}{\sqrt{-16}}$$

6.
$$-2i\sqrt{-16}$$

9.
$$\sqrt{-49} - i$$

12.
$$\sqrt{-25} + i^2 \sqrt{-36}$$

15.
$$2i^2 + i^2 + i^2 - i^2$$