2.4 Multiplication by –1

TEKS a.1, a.6, A.1.B

MATERIALS • paper and pencil

QUESTION What is the product of any integer *a* and –1?

You can rewrite a multiplication expression as repeated addition. For example, 3 • 8 can be rewritten as 8 + 8 + 8. Because the sum is 24, you can conclude that 3 • 8 = 24.

EXPLORE Find the product of an integer and –1

STEP 1 Copy and complete the table.

Multiplication Expression	Addition Expression	Sum
5 • (–1)	–1 + (–1) + (–1) + (–1) + (–1)	–5
4 • (–1)	?	?
3 • (–1)	?	?
2 • (–1)	?	?

STEP 2 Copy and complete the multiplication equations below.

5 • (–1) = ?
4 • (–1) = ?
3 • (–1) = ?
2 • (–1) = ?

} Complete using the table from Step 1.

1 • (–1) = ?
0 • (–1) = ?
–1 • (–1) = ?
–2 • (–1) = ?
–3 • (–1) = ?

} Complete by extending the pattern in the first four products.

DRAW CONCLUSIONS Use your observations to complete these exercises

1. Copy and complete: For any integer *a*, *a* • (–1) = ?.

Find the product.

2. 12 • (–1) **3.** 10 • (–1) **4.** –23 • (–1)

5. –47 • (–1) **6.** –18 • (–1) **7.** 15 • (–1)