

Unit 6 Lesson 19: Expanding and Factoring

1 Number Talk: Parentheses (Warm up)

Student Task Statement

Find the value of each expression mentally.

$$2 + 3 \cdot 4$$

$$(2 + 3)(4)$$

$$2 - 3 \cdot 4$$

$$2 - (3 + 4)$$

2 Factoring and Expanding with Negative Numbers

Student Task Statement

In each row, write the equivalent expression. If you get stuck, use a diagram to organize your work. The first row is provided as an example. Diagrams are provided for the first three rows.

| | | |
|--|--|---|
| 5 $-2y$ <div style="border: 1px solid black; width: 100%; height: 100%; display: flex; justify-content: space-around; align-items: center;"> <div style="border-right: 1px solid black; width: 45%; padding: 5px; text-align: center;">-15</div> <div style="width: 45%; padding: 5px; text-align: center;">$6y$</div> </div> | a -6 5 <div style="border: 1px solid black; width: 100%; height: 100%; display: flex; justify-content: space-around; align-items: center;"> <div style="border-right: 1px solid black; width: 45%;"></div> <div style="width: 45%;"></div> </div> | <div style="border: 1px dashed black; width: 100%; height: 100%; display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px dashed black; width: 45%; height: 45%;"></div> <div style="border: 1px dashed black; width: 45%; height: 45%;"></div> </div> 2 <div style="border: 1px solid black; width: 100%; height: 100%; display: flex; justify-content: space-around; align-items: center;"> <div style="border-right: 1px solid black; width: 45%; padding: 5px; text-align: center;">$6a$</div> <div style="width: 45%; padding: 5px; text-align: center;">$-2b$</div> </div> |
|--|--|---|

| factored | expanded |
|-------------------|-------------------|
| $-3(5 - 2y)$ | $-15 + 6y$ |
| $5(a - 6)$ | |
| | $6a - 2b$ |
| $-4(2w - 5z)$ | |
| $-(2x - 3y)$ | |
| | $20x - 10y + 15z$ |
| $k(4 - 17)$ | |
| | $10a - 13a$ |
| $-2x(3y - z)$ | |
| | $ab - bc - 3bd$ |
| $-x(3y - z + 4w)$ | |