## Unit 7 Lesson 7: Rewriting Quadratic Expressions in Factored Form (Part 2)

### 1 Sums and Products (Warm up)

#### Student Task Statement

1. The product of the integers 2 and -6 is -12. List all the other pairs of integers whose product is -12.
2. Of the pairs of factors you found, list all pairs that have a positive sum. Explain why they all have a positive sum.
3. Of the pairs of factors you found, list all pairs that have a negative sum. Explain why they all have a negative sum.

### 2 Negative Constant Terms

#### Student Task Statement

1. These expressions are like the ones we have seen before.

|  |  |
| --- | --- |
| * factored form | * standard form |
|  |  |
|  |  |
|  |  |
|  |  |

* Each row has a pair of equivalent expressions.
* Complete the table. If you get stuck, consider drawing a diagram.

1. These expressions are in some ways unlike the ones we have seen before.

|  |  |
| --- | --- |
| * factored form | * standard form |
|  |  |
|  |  |
|  |  |
|  |  |

* Each row has a pair of equivalent expressions.
* Complete the table. If you get stuck, consider drawing a diagram.

1. Name some ways that the expressions in the second table are different from those in the first table (aside from the fact that the expressions use different numbers).

### 3 Factors of 100 and -100

#### Student Task Statement

1. Consider the expression .

* Complete the first table with all pairs of factors of 100 that would give positive values of , and the second table with factors that would give negative values of .
* For each pair, state the value they produce. (Use as many rows as needed.)
* positive value of

|  |  |  |
| --- | --- | --- |
| * factor 1 | * factor 2 | * (positive) |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

* negative value of

|  |  |  |
| --- | --- | --- |
| * factor 1 | * factor 2 | * (negative) |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

1. Consider the expression .

* Complete the first table with all pairs of factors of -100 that would result in positive values of , the second table with factors that would result in negative values of , and the third table with factors that would result in a zero value of .
* For each pair of factors, state the value they produce. (Use as many rows as there are pairs of factors. You may not need all the rows.)
* positive value of

|  |  |  |
| --- | --- | --- |
| * factor 1 | * factor 2 | * (positive) |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

* negative value of

|  |  |  |
| --- | --- | --- |
| * factor 1 | * factor 2 | * (negative) |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

* zero value of

|  |  |  |
| --- | --- | --- |
| * factor 1 | * factor 2 | * (zero) |
|  |  |  |
|  |  |  |
|  |  |  |



1. Write each expression in factored form:



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