

1.

$$2 \cdot 12 = 24$$

$$2 + 12 = 14$$

2.

$$24 \cdot 3 = 72$$

$$24 - 3 = 21$$

3.

$$(x + 4)(x + 2)$$

4.

$$(x - 4)(x + 2)$$

5.

$$(x - 4)(x - 2)$$

6.

$$(x + 4)(x - 2)$$

7.

Yes, the middle term can be negative. When you add two negative terms, the result will be negative.

8.

No, when a negative and a negative are multiplied together to get the last term, the result is always a positive number.

9.

$$49x^2 - 4$$

$$(7x - 2)(7x + 2)$$

10.

$$144x^2 + 120x + 25$$

$$(12x + 5)^2 \text{ or } (12x + 5)(12x + 5)$$

11.

$$9x^2 - 48x + 64$$

$$(3x - 8)^2 \text{ or } (3x - 8)(3x - 8)$$

12.

$$x^2 - y^2$$

$$(x - y)(x + y)$$

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13.

$$8x^2 - 32$$

$$8(x^2 - 4)$$

$$8(x - 2)(x + 2)$$

14.

$$2x^2 - 28x + 98$$

$$2(x^2 - 14x + 49)$$

$$2(x - 7)^2 \text{ or } 2(x - 7)(x - 7)$$