

Simplify...

1. $(x - 2)(x + 2)$

$$x^2 + \cancel{2x} - \cancel{2x} - 4$$

$$x^2 - 4$$

2. $(x + 5)(x - 5)$

$$x^2 - \cancel{5x} + \cancel{5x} - 25$$

$$x^2 - 25$$

What did you notice?

Difference of Squares!

Factor:

$$\begin{aligned} 1. \quad & x^2 - 16 \\ & (x)^2 - (4)^2 \\ & = (x+4)(x-4) \end{aligned}$$

$$\begin{aligned} 2. \quad & -25 + z^2 \\ & z^2 - 25 \\ & (z)^2 - (5)^2 \\ & (z+5)(z-5) \end{aligned}$$

Try these...

1. $x^2 - 100$
 $(x)^2 - (10)^2$
 $(x-10)(x+10)$

3. $81x^2 - 49b^2$
 $(9x)^2 - (7b)^2$
 $(9x+7b)(9x-7b)$

5. $\frac{9}{64} - z^2$
 $(\frac{3}{8})^2 - (z)^2$
 $(\frac{3}{8}+z)(\frac{3}{8}-z)$

2. $-36 + y^2$
 $y^2 - 36$
 $(y)^2 - (6)^2$
 $(y+6)(y-6)$

4. $(\text{Math})^2 - 4$
 $(\text{Math})^2 - (2)^2$
 $(\text{Math}-2)(\text{Math}+2)$

6. $p^{10} - 64$
 $(p^5)^2 - (8)^2$
 $(p^5+8)(p^5-8)$

The ultimate question!

$$(x-3)^2 - 25(w+2)^2$$

$$(x-3)^2 - [5(w+2)]^2$$

$$[(x-3) + 5(w+2)] [(x-3) - 5(w+2)]$$

