

Simplify...

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

$$x^2 + \underline{2x} - \underline{2x} - 4$$
$$= x^2 - 4$$

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

$$x^2 - 5x + 5x - 25$$
$$= x^2 - 25$$

What did you notice?

Difference of Squares!

Factor:

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

Difference of Squares!

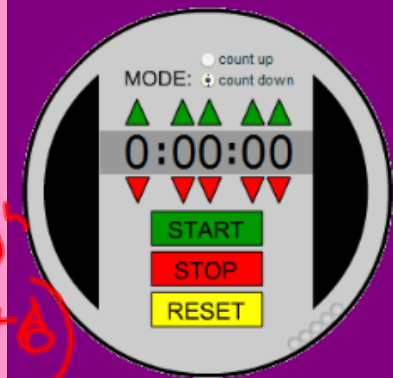
Factor:

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

Try these...

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

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



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

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

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

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

The ultimate question!

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

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

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

