Unit

Pre Requisite 4

Learning Intention:

Given a polynomial students will be able to factor a quadratic expression to reveal its zeros.

Success Criteria:

- **I will be able to factor a quadratic function.**
- **I will be able to find the zeros of a quadratic function.**

Example

Solve:

$$7x^2 + 14x = 0$$

$ax^2+bx+c=0$

$7x^2+14x=0$

$7x(x+2)=0$

$\frac{7x}{7}=\frac{0}{7}$ $\quad x+2=0$

$-2 \quad -2$

$\boxed{x=0}$ $\quad \boxed{x=-2}$

Check

$7(-2)^2-14(-2)=0$

$28-28=0$

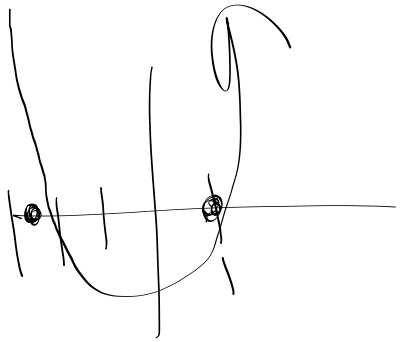
$0=0$

Example

Solve:

$$2x^2 + 3x = 5$$

$1(5)$



$ax^2 + bx + c = 0$

$2x^2 + 3x = \cancel{5}$

$-5 \quad \cancel{-5}$

$2x^2 + 3x \boxed{-5} = 0$

$(2x+5)(x-1) = 0$

$2x + 5 = 0 \qquad x - 1 = 0$

$-5 \quad -5 \qquad +1 \quad +1$

$2x = -5$

$\boxed{x = -5/2} \qquad \boxed{x = 1}$

Example

Solve:

$$9x^2 - 36 = 0$$

Think Write Pair Share

Jaime and Sam both factored the polynomial

$2x^2 + 10x + 8$

which student is correct? Explain.

Jaime

$2x^2 + 10x + 8$

$2(x^2 + 5x + 4)$

$2(x + 1)(x + 4)$

Sam

$2x^2 + 10x + 8$

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

Factoring requires me to find a G.C.F, therefore Jaime is correct.

Example

Solve:

$x^2-4x+3=0$

$(x-3)(x-1)=0$

$x=3 \quad x=1$

$x^4-4x^2+3=0$