Pakistan School
Kingdom of Bahrain

WELCOME CLASS 10TH (SCIENCE)

Quadratic Equations

We are going to start our Online class today. I hope we all will enjoy and learn.

Rules for class:

1) Be on time for all your classes.
2) Respect all the participants of the class.
3) Do not create any disturbance.
4) Pay attention to your teacher.
5) Raise hand if you have a question.
6) Enter the class with your actual name so that your attendance can be marked.
7) Ask any question relevant to topic taught only.
8) If any student question is not answered due to much participant don't mind please.

Objectives

Students will be able to:

Write quadratic equations in standard form and find the pure quadratic equation

Quadratic Equation

An equation that contain the square of the unknown (variable) quantity, but not higher power is called a quadratic equation or an equation of the second degree.

Standard form of quadratic equation is $ax^2 + bx + c = 0$

Pure Quadratic Equation

If $b = 0$ in quadratic equation $ax^2 + bx + c = 0$ then it is called a pure quadratic equation.

i.e. $ax^2 + 0x + c = 0$

e.g. $x^2 - 16 = 0$

Exercise 1.1

Q1. Write the following quadratic equations in the standard form and point out pure quadratic equations

(i) $(x+7)(x-3)=-7$

$Solution:(x+7)(x-3)=-7$

$x^2-3x+7x-21=-7$

$x^2+4x-21+7=0$

$x^2+4x-14=0$

The standard form of Quadratic equation is:

$x^2+4x-14=0$

(iv) $\left(\frac{x+4}{x-2}\right) - \left(\frac{x-2}{x}\right) + 4 = 0$

$$Solution: \left(\frac{x+4}{x-2}\right) - \left(\frac{x-2}{x}\right) + 4 = 0$$

$$\frac{(x+4)x - (x-2)^2 + 4x(x-2)}{(x-2)(x)} = 0$$

$$(x+4)x - \left[(x)^2 + (2)^2 - 2(x)(2)\right] + 4x^2 - 8x = 0$$

$$x^2 + 4x - x^2 - 4 + 4x + 4x^2 - 8x = 0$$

$$4x^2 + 4x + 4x - 8x - 4 = 0$$

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

$$4(x^2 - 1) = 0$$

$$x^2 - 1 = 0$$

$$So, x^2 - 1 = 0 \; is \; pure \; Quadratic \; equation$$

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Plenary

Write the following quadratic equation in standard form and point out the pure quadratic equation

$$\frac{x}{x+1} + \frac{x+1}{x} = 6$$

Solution

$$\frac{x^2+(x+1)^2}{x(x+1)}=6$$

$$x^2+x^2+1+2x=6x(x+1)$$

$$2x^2+2x+1=6x^2+6x$$

$$0=6x^2+6x-2x^2-2x-1$$

$$0=4x^2+4x-1$$

$$4x^2+4x-1=0$$

The standard form of Quadratic equation is

$$4x^2+4x-1=0$$

Homework

Ex 1.1 Q1(v, vi)