Pakistan School
Kingdom of Bahrain

# Welcome Class 10th (Arts)

## Algebraic Formulas and Applications

# Objectives

Students will be able to:

Reduce the given algebraic expression to lowest terms

# Reduce the given rational expression to lowest terms

Q23. $\dfrac{x^2-4x+4}{x^2-4} \div \dfrac{x}{x-2}$

$\dfrac{x^2-4x+4}{x^2-4} \div \dfrac{x}{x-2}$

$= \dfrac{x^2-4x+4}{x^2-4} \times \dfrac{x-2}{x}$

$= \dfrac{x^2-2x-2x+4}{(x)^2-(2)^2} \times \dfrac{x-2}{x}$

$= \dfrac{x(x-2)-2(x-2)}{(x-2)(x+2)} \times \dfrac{x-2}{x}$

$= \dfrac{(x-2)(x-2)}{(x-2)(x+2)} \times \dfrac{x-2}{x}$

$= \dfrac{(x-2)(x-2)}{x(x+2)}$ or

$= \dfrac{x^2-4x+4}{x^2+2x}$.

Q 27. $$\frac{x(2x-1)^2}{2x^2-1} \div \frac{4x^2-1}{4x^2+4x+1}$$

$$= \frac{x(2x-1)^2}{2x^2-1} \times \frac{4x^2+4x+1}{4x^2-1}$$

$$= \frac{x(2x-1)^2}{2x^2-1} \times \frac{4x^2+2x+2x+1}{4x^2-1}$$

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

$$= \frac{x(2x-1)^{\cancel{2}}}{2x^2-1} \times \frac{(2x+1)\cancel{(2x+1)}}{\cancel{(2x-1)}\cancel{(2x+1)}}$$

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

$$= \frac{x(4x^2-1)}{2x^2-1}$$

$$= \frac{4x^3-x}{2x^2-1}$$

# Plenary

Simplify

$$\frac{x+5}{x^2+6x}+\frac{x^3+6x^2}{x+5}$$

# Solution

$$\frac{x+5}{x^2+6x} \times \frac{x^3+6x^2}{x+5}$$

$$= \frac{\cancel{x+5}}{\cancel{x}\,\cancel{(x+6)}} \times \frac{x^2\,\cancel{(x+6)}}{\cancel{x+5}}$$

$$= x$$

# Homework

Ex 1.1 remaining parts