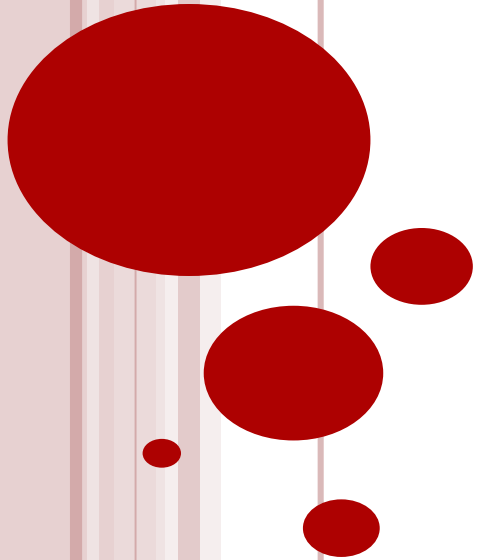




**Pakistan School**  
Kingdom of Bahrain

# WELCOME CLASS 10<sup>TH</sup> (ARTS)

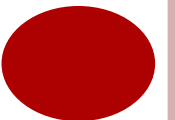
## Algebraic Formulas and Applications



# OBJECTIVES

Students will be able to:

Reduce the given algebraic expression  
to lowest terms



Reduce the given rational expression to lowest terms

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

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

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

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

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

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

$$= \frac{(x-2)(x-2)}{x(x+2)} \quad \text{or}$$

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

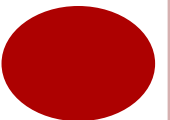
$$\begin{aligned}
 \text{Q 27. } & \frac{x(2x-1)^2}{2x^2-1} \div \frac{4x^2-1}{4x^2+4x+1} \\
 = & \frac{x(2x-1)^2}{2x^2-1} \times \frac{4x^2+4x+1}{4x^2-1} \\
 = & \frac{x(2x-1)^2}{2x^2-1} \times \frac{4x^2+2x+2x+1}{4x^2-1} \\
 = & \frac{x(2x-1)^2}{2x^2-1} \times \frac{2x(2x+1)+1(2x+1)}{(2x)^2-(1)^2} \\
 = & \frac{x(2x-1)^2}{2x^2-1} \times \frac{(2x+1)(\cancel{2x+1})}{(\cancel{2x-1})(\cancel{2x+1})}
 \end{aligned}$$

$$\begin{aligned}
 & = \frac{x(2x-1)(2x+1)}{2x^2-1} \\
 & = \frac{x(4x^2-1)}{2x^2-1} \\
 & = \frac{4x^3-x}{2x^2-1}
 \end{aligned}$$

# PLENARY

Simplify

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



# SOLUTION

$$\begin{aligned} & \frac{x+5}{x^2+6x} \times \frac{x^3+6x^2}{x+5} \\ &= \frac{\cancel{x+5}}{\cancel{x}(x+6)} \times \frac{x^2 \cancel{(x+6)}}{\cancel{x+5}} \\ &= x \end{aligned}$$



# HOMEWORK

Ex 1.1 remaining parts

