12th cbse

November 24, 2023

Questions

1. If $f(x) = \frac{1-x}{1+x}$,then find $(f \circ f)(x)$.

2. Let W denote the set of words in the English dictionary. Define the relation R by $R = \{(x, y) \in W \times W \mid \text{such that } x \text{ and } y \text{ have at least one letter in common.}$ Show that this relation R is reflexive and symmetric, but not transitive.

   Find the inverse of the function $f(x) = \frac{4x}{3x+4}$.

3. $$\int x\sqrt{x+2}\,dx \text{ is equal to}$$

$$\text{(A)}\frac{2}{5}(x+2)^{\frac{5}{2}} - \frac{2}{3}(x+2)^{\frac{3}{2}} + C$$

$$\text{(B)}\frac{5}{2}(x+2)^{\frac{5}{2}} + \frac{3}{2}(x+2)^{\frac{3}{2}} + C$$

$$\text{(C)}\frac{2}{5}(x+2)^{\frac{5}{2}} - \frac{4}{3}(x+2)^{\frac{3}{2}} + C$$

$$\text{(D)}\frac{2}{5}(x+2)^{\frac{5}{2}} + \frac{4}{3}(x+2)^{\frac{3}{2}} + C$$

   where C is the constant of integration.