Practice Exercises

Find the product of the following rational algebraic expressions.

1. $\dfrac{10uv^2}{3xy^2} \cdot \dfrac{6x^2y^2}{5u^2v^2}$

2. $\dfrac{a^2-b^2}{2ab} \cdot \dfrac{a^2}{a-b}$

3. $\dfrac{x^2-3x}{x^2+3x-10} \cdot \dfrac{x^2-4}{x^2-x-6}$

4. $\dfrac{x^2+2x+1}{y^2-2y+1} \cdot \dfrac{y^2-1}{x^2-1}$

5. $\dfrac{a^2-2ab+b^2}{a^2-1} \cdot \dfrac{a-1}{a-b}$

Problem Set

Find the product of the following rational algebraic expressions.

1. $\dfrac{12mn^2}{6xy^2} \cdot \dfrac{9x^2y^2}{4m^2n^2}$

2. $\dfrac{x^2-y^2}{2xy} \cdot \dfrac{y^2}{x+y}$

3. $\dfrac{x^2-2x}{x^2-3x-10} \cdot \dfrac{x^2-4x-5}{x^2-4}$

4. $\dfrac{x^2+4x+4}{x^2+3x+2} \cdot \dfrac{x^2-1}{x^2-4}$

5. $\dfrac{a^2+2ab+b^2}{a^2-b^2} \cdot \dfrac{a-b}{a+b}$

Problem Set

1. $\dfrac{9x}{2m}$
2. $\dfrac{(x-y)(x+y)}{2xy} \cdot \dfrac{y^2}{x+y}$

   $= \dfrac{y(x-y)}{2x}$
3. $\dfrac{x(x-2)}{(x-5)(x+2)} \cdot \dfrac{(x-5)(x+1)}{(x-2)(x+2)}$

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

4. $$\frac{(x+2)(x+2)}{(x+1)(x+2)} \cdot \frac{(x-1)(x+1)}{(x-2)(x+2)}$$
$$= \frac{x-1}{x-2}$$

5. $$\frac{(a+b)(a+b)}{(a-b)(a+b)} \cdot \frac{a-b}{a+b}$$
$$= 1$$