Name: _____ Period: _____ Date: _____

Multiplying and Dividing Rational Expressions Exit Quiz

Perform the indicated operation on rational expressions.

1. $\frac{18w^3}{28y^3} \times \frac{8y^2}{15w}$

2. $\frac{20x^2}{6w} \div \frac{5x^3}{14w^2}$

3. $\frac{3x^2 - 12}{14x - 28} \times \frac{7x}{11x + 22}$

4. $\frac{4x^2 - 1}{18xy} \div \frac{6x - 3}{16x^2 + 8x}$

5. $\frac{4a^2 - ab - 5b^2}{ax + by + ay + bx} \div (8a - 10b)$

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Multiplying and Dividing Rational Expressions Exit Quiz

Answer:

Perform the indicated operation on rational expressions.

1. $\frac{18w^3}{28y^3}\times\frac{8y^2}{15w}$

Solution:

$\frac{18w^3}{28y^3}\times\frac{8y^2}{15w}=\frac{\cancel{3w}(6w^2)}{7y\cancel{(4y^2)}}\times\frac{2\cancel{(4y^2)}}{\cancel{3w}(5)}=\frac{12w^2}{35y}$

2. $\frac{20x^2}{6w}\div\frac{5x^3}{14w^2}$

Solution:

$\frac{20x^2}{6w}\div\frac{5x^3}{14w^2}=\frac{20x^2}{6w}\times\frac{14w^2}{5x^3}$

$=\frac{4\cancel{(5)}x^{\cancel{2}}}{3\cancel{(2)}w}\times\frac{7\cancel{(2)}w^{\cancel{2}}}{\cancel{5}x^3}=\frac{28w}{3x}$

3. $\frac{3x^2-12}{14x-28}\times\frac{7x}{11x+22}$

Solution:

$\frac{3x^2-12}{14x-28}\times\frac{7x}{11x+22}$

$=\frac{3\cancel{(x+2)}\cancel{(x-2)}}{\cancel{14(x-2)}}\times\frac{\cancel{7}x}{11\cancel{(x+2)}}=\frac{3x}{22}$

4. $\frac{4x^2-1}{18xy}\div\frac{6x-3}{16x^2+8x}$

Solution:

$\frac{4x^2-1}{18xy}\div\frac{6x-3}{16x^2+8x}$

$=\frac{4x^2-1}{18xy}\times\frac{16x^2+8x}{6x-3}$

$=\frac{\cancel{(2x-1)}(2x+1)}{18\cancel{x}y}\times\frac{8\cancel{x}(2x+1)}{3\cancel{(2x-1)}}=\frac{4(2x+1)^2}{27y}$

5. $\frac{4a^2-ab-5b^2}{ax+by+ay+bx}\div(8a-10b)$

Solution:

$\frac{4a^2-ab-5b^2}{ax+by+ay+bx}\div(8a-10b)$

$=\frac{4a^2-ab-5b^2}{ax+by+ay+bx}\times\frac{1}{(8a-10b)}$

$=\frac{\cancel{(4a-5b)}\cancel{(a+b)}}{\cancel{(a+b)}(x+y)}\times\frac{1}{2\cancel{(4a-5b)}}$

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