

NAME: _____

P.I. A.A.18: Multiply algebraic fractions and express the product in simplest form

P.I. A2.A.16: Perform arithmetic operations with rational expressions and rename to lowest terms

Multiply:

1. $\frac{x^2}{x+2} \cdot \frac{x^2-5x-14}{x^2+2x}$

[A] x [B] $\frac{-5x-14}{4x}$

[C] $\frac{x^2-7x}{x+2}$ [D] $\frac{x^2+7x}{x+2}$

2. $\frac{x^2}{x+5} \cdot \frac{x^2-x-30}{x^2-6x}$

[A] $\frac{x^2+6x}{x-6}$ [B] $\frac{-x-30}{-30x}$

[C] x [D] $\frac{x^2-6x}{x-6}$

3. $\frac{x^2}{x+9} \cdot \frac{x^2+6x-27}{x^2-3x}$

[A] x [B] $\frac{6x-27}{-27x}$

[C] $\frac{x^2-3x}{x-3}$ [D] $\frac{x^2+3x}{x-3}$

4. What is the product of

$$\frac{x^2-x-6}{x^2-3x+2} \cdot \frac{2x^2-6x+4}{x^2-2x-3}?$$

[A] $\frac{2x+4}{x+1}$ [B] $\frac{x+2}{x+1}$

[C] 6 [D] $\frac{2x+4}{x-1}$

Multiply:

5. $\frac{x^2}{x+8} \cdot \frac{x^2+x-56}{x^2-7x}$

6. $\frac{x^2}{x+4} \cdot \frac{x^2-2x-24}{x^2-6x}$

7. $\frac{x^2}{x-9} \cdot \frac{x^2-4x-45}{x^2-4x}$

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

9. Compare the quantities in Column A and Column B.

<u>Column A</u>	<u>Column B</u>
$\frac{-3x-6}{x+2}$	$-6x \cdot \frac{3x}{6x^2}$

[A] The quantity in Column A is greater.

[B] The quantity in Column B is greater.

[C] The quantities are equal.

[D] The relationship cannot be determined from the information given.

10. Explain why the simplified form of

$$\frac{x-8}{4} \cdot \frac{3}{8-x} \text{ is } -\frac{3}{4}.$$

[1] C

[2] C

[3] A

[4] A

[5] x

[6] x

[7] $\frac{x^2 + 5x}{x - 4}$

[8] x

[9] C

The quotient of $x - 8$ and $8 - x$ is -1 and
there are no other common factors, so the

[10] simplified form is $-\frac{3}{4}$.