

1. Find the product

$$\frac{x^2 - 4x - 5}{x^2 + 6x + 9} \cdot \frac{2x^2 + 6x}{x^2 + 3x + 2}$$

2. Find the quotient Date _____ Period: _____

$$\frac{x^2 + 5x - 14}{x + 3} \div (x^2 - 4x + 4)$$

3. Find the sum

$$\frac{7}{x^2 - 5x - 24} + \frac{3}{x - 8}$$

4. Find the sum

$$\frac{14}{x^2 + 7x - 18} + \frac{6}{x + 9}$$

5. Find the difference

$$\frac{5}{x+1} - \frac{3}{x+2}$$

6. Find the difference

$$\frac{6}{x+4} - \frac{5x}{x-3}$$

7. Solve the equation

$$\frac{3}{x} + \frac{5}{2} = \frac{-12}{x}$$

8. Solve the equation

$$\frac{5}{x} + \frac{7}{4} = \frac{9}{x}$$

9. Write a rule for the nth term of the sequence. Then, find the 23rd term

375, 75, 15, 3, ...

10. Write a rule for the nth term of the sequence. Then, find the 23rd term

51, 48, 45, 42, ...

11. Find the sums

a.
$$\sum_{k=1}^6 (k^2 - 3)$$

b.
$$\sum_{i=1}^{20} (3i + 7)$$

c.
$$\sum_{n=1}^{\infty} 7\left(\frac{1}{4}\right)^{n-1}$$

d.
$$\sum_{k=1}^{10} 4(3)^{k-1}$$