

Precalculus 9.4 Homework

Name _____ period _____ date _____

Find the partial fraction decomposition of each rational expression.

1. $\frac{4}{x(x-1)}$

2. $\frac{x}{(x-1)(x-2)}$

3. $\frac{1}{x(x^2+1)}$

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

$$5. \frac{x+2}{(x-1)^2(x+1)^2}$$

$$6. \frac{x}{x^2+7x-8}$$

$$7. \frac{x^2-11x-18}{x(x^2+3x+3)}$$

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

$$9. \frac{x}{(3x-2)(2x+1)}$$

10. $\frac{1}{x^3 - 8}$ (Hint: $A^3 - B^3 = (A - B)(A^2 + AB + B^2)$)

11. $\frac{x^2 + 9}{x^4 - 2x^2 - 8}$ (Hint: Use u -substitution to factor the denominator.)