NAME AND SECTION:_____

INSTRUCTOR'S NAME:_____

1. What are all the antiderivatives of $\frac{1}{x+2}$?

2. Can you check that what you did is correct?

3. Write down the function $f(x) = \frac{1}{x^2-1}$ as

$$f(x) = \frac{A}{x+1} + \frac{B}{x-1}$$

for some values of A and B

4. What are all the antiderivatives of $f(x) = \frac{1}{x^2-1}$?

5. Can you check that what you did is correct?

6. Write down the function $f(x) = \frac{x^3+5x^2-6x+8}{x^2-1}$ as

$$f(x) = \frac{(Ax+B)(x^2-1)+Cx+D}{x^2-1} = Ax + B + \frac{Cx+D}{x^2-1}$$

for some values of A, B, C and D.

7. What are all the antiderivatives of $f(x) = \frac{x^3+5x^2-6x+8}{x^2-1}$?

8. Can you check that what you did is correct?