Quiz 3.6 – Integrals of Polynomials

1. (1 point) —alfredLibrary/AUCI/chapter3/lesson6/quiz/question1pet.pg—
Match the rule with its formula:

[?] 1. Sum rule for integrals
[?] 2. Difference rule for integrals
[?] 3. Constant multiple rule for integrals
[?] 4. Power rule for integrals

A. $\int x^n dx = \frac{1}{n+1}x^{n+1} + C$
B. $\int f(x)g(x)dx = \int f(x)dx \int g(x)dx$
C. $\int (f(x)+g(x))dx = \int f(x)dx + \int g(x)dx$
D. $\int (f(x)-g(x))dx = \int f(x)dx - \int g(x)dx$
E. $\int x^n dx = \frac{1}{n+1}x^{n+1} + C, n \neq -1$
F. $\int kf(x)dx = k\int f(x)dx$
G. None of the above

2. (1 point) —alfredLibrary/AUCI/chapter3/lesson6/quiz/question44pet.pg—
Evaluate the definite integral:

$$\int_1^3 \left(y^8 - 5y^4 + 2y^3\right) dy = \_\_\_\_\_$$

3. (1 point) —alfredLibrary/AUCI/chapter3/lesson6/quiz/question33pet.
Evaluate the indefinite integral:

$$\int \left(\frac{8}{x^4} - \frac{6}{x^6} + 12\right) dx = \_\_\_\_\_ .$$

4. (1 point) —alfredLibrary/AUCI/chapter3/lesson6/quiz/flow229pet.pg–
The function $W'(t) = 12t^2 - 36t + 32$ $\frac{cc}{min}$ measures the RATE at which water is flowing through a pipe at time t. The net amount of water that has flown through the pipe from time $t = 3$ minutes to time $t = 6$ minutes is given by

$W(\ \_\_\ ) - W(\ \_\_\ ) = \_\int\_$ _____ dt

By the Fundamental Theorem, the net flow of water over this time period is

_____ | _____ = _____ (include u