Quiz 2.6 – Integrals of Linear and Quadratic Functions

1. **(1 point) —alfredLibrary/AUCI/chapter2/lesson6/quiz/question1pet.pg—**
Recall the antiderivative formulas for constant, linear, and quadratic functions:

$$\int m\,dx = mx + C$$
$$\int (ax+b)\,dx = \frac{1}{2}ax^2 + bx + C$$
$$\int (ax^2+bx+c)\,dx = \frac{1}{3}ax^3 + \frac{1}{2}bx^2 + cx + D$$

Evaluate the following indefinite integrals:

(a) $\int -4\,dx =$ _____

(b) $\int (-8x-4)\,dx =$ _____

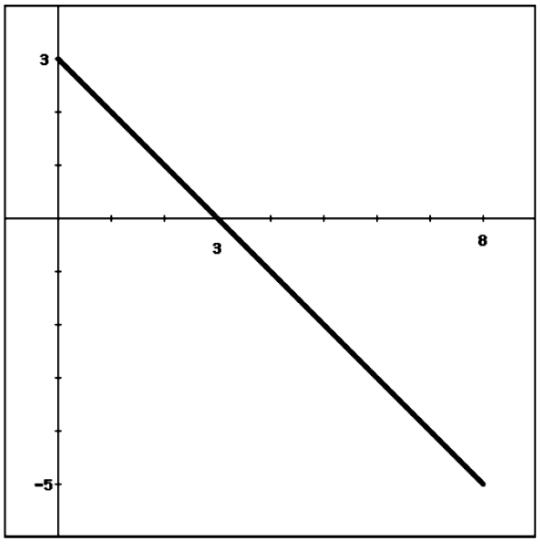
(c) $\int (7x^2-8x-4)\,dx =$ _____

2. **(1 point) —alfredLibrary/AUCI/chapter2/lesson6/quiz/question4pet.pg—**
Evaluate the following definite integrals using the Fundamental Theorem of Calculus:

(a) $\int_6^{11} 5\,du =$ ___ | _____ = _____

(b) $\int_{-3}^{-2} (4x+5)\,dx =$ _____ | _____ = _____

3. **(1 point) —alfredLibrary/AUCI/chapter2/lesson6/quiz/question5pet.p**



(Click on graph to enlarge)

Suppose that the graph represents the velocity (in m/s) of an object in rectilinear motion. Set up and evaluate the following on the interval $[0, 8]$. Use geometry if possible. The final answer in each part requires **units**. (HINT: First find the slope-intercept equation of the velocity line.)

(a) Displacement = ___$\int$___ _____ dx = _____

(b) Total distance traveled = ___$\int$___ _____ dx = _____