HW Quiz B Tabular and Partial Fractions Name_____

Evaluate the integral.

1) $\int x \sin 6x \, dx$

Use tabular integration to find the antiderivative.

2) $\int (x^2 - 6x)\, e^x \, dx$

Solve the initial value problem.

3) $\frac{dy}{dx} = x\sqrt{x - 5}$ and $y = 6$ when $x = 6$

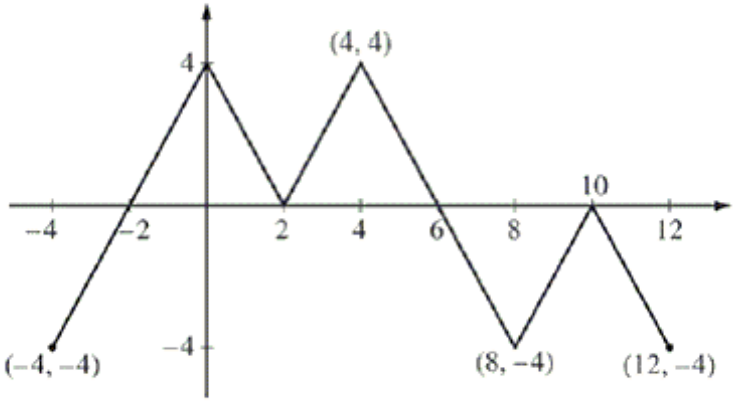
Evaluate the integral.

4) $\int \frac{5x + 33}{x^2 + 6x + 5}\, dx$

5) $\int \frac{x + 5}{x^2 + 3x}\, dx$

6) The figure above shows the graph of the piecewise-linear function f. For $-4 \le x \le 12$, the function g is defined by $g(x) = \int_2^x f(t)dt$

No calculator is allowed for these problems.



Graph of f

a) Does g have a relative minimum, a relative maximum, or neither at x = 2? Justify your answe

b) Does the graph of g have a point of inflection at x = 8 Justify your answer.

c) Find the absolute minimum value and the absolute maximum value of g on the interval $-4 \le x \le 12$ Justify your answers.

d) For $-4 \le x \le 12$, find all intervals for which $g(x) \ge 0$