AP Calculus AB   Name: _____
Unit 7 – Quiz Review (Days 1 – 3)

(−3, 2)

(0, 1)   (2, 1)

O

(4, −1)

(−5, −2)
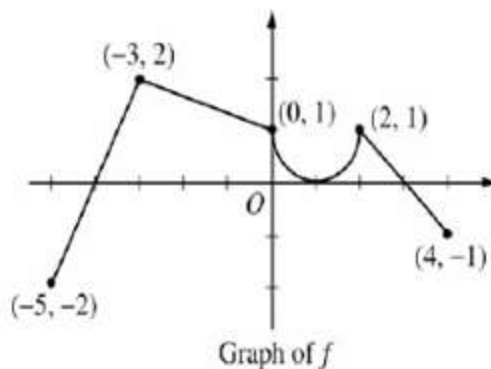
Graph of f

The graph of a function, f, which consists of three line segments and a semi-circle is pictured above. Let $g(x) = \int_{-3}^{x} f(t)dt$. Use this information to answer questions 1 – 4.

1. Compute the values of $g(-5)$ and $g(4)$.

2. Find $g'(2)$ and $g''(2)$. Show or explain your work.

3. Find the coordinates of the absolute maximum of g on the closed interval [−5, 4]. Justify your answer.

4. Find all the values of x in the open interval (-5, 4) at which the graph of g has a point of inflection.

5. If $\dfrac{dy}{dx} = \dfrac{x^3}{y}$ and f(0) = 2, find the particular solution to the differential equation.

6. If $u = 2x - 1$, then $\int x\sqrt[3]{2x - 1}\,dx =$

7. $\int 7x\sqrt{4x^2 - 3}\,dx$