College Board Mock Exam #1
Question 1
(a)
$$f'(1) V_p(1) + f(1) V_p'(1)$$

 $f'(1) V_p(1) + f(1) V_p'(1) = 2(-29) + 1(-10)$ +1 answer w/ work
(b) $\frac{1}{2}(.3)(0+55) + \frac{1}{2}(.7)(55 + -29) + \frac{1}{2}(1.8)(-29 + 55)$ +1 trapezoidal sum
(c) $\int_{-6}^{5} f(t) dt = \int_{-7}^{-2} f(t) dt + \int_{-7}^{5} f(t) dt$
 $f(t) dt = \int_{-6}^{-2} f(t) dt + \int_{-7}^{5} f(t) dt$
 $f(t) dt = \int_{-8}^{2} f(t) dt + \frac{1}{2}(1+3)(1) + 3(3) - \frac{1}{4}\pi(3)^{2}$
 $\int_{-6}^{2} f(t) dt = \frac{7}{7} - (\frac{1}{2}(1+3) + 3(3) - \frac{1}{4}\pi(3)^{2})$, +1 answer

(d)
$$\int_{2f'(+)+4}^{5} dt = 2f(+)+4t \Big|_{3}^{5} +1 |s+ Fundamental There on applied
= 2f(5)+4(5)-2f(3)-4(3)
= (0+20-2(3-(5))-12) +1 answer$$

(e)
$$g(t) = \int f(x) dx \Rightarrow g'(t) = f(t) + 1 g'(t) = f(t)$$

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$$\begin{aligned} \widehat{(f)} & \widehat{(f)} = f(t) \\ g''(t) = f'(t) \\ f''(t) = f'(t) \\ The value of change of g is decreasing when t=3 \\ The value of change of g is decreasing when t=3 \\ f''(3) is regative \\ f'''(3) is regative \\ f''(3) is re$$

Question #2]

$$\begin{array}{c} \textcircled{O} \quad \frac{dV}{dt} = 2\pi r \cdot \frac{dr}{dt} h + \pi r^2 \cdot \frac{dh}{dt} \\ \frac{dV}{dt} = \pi \left(3\right)^2 \left(-\frac{1}{5} \sqrt{10}\right) m^3 / s \end{array}$$

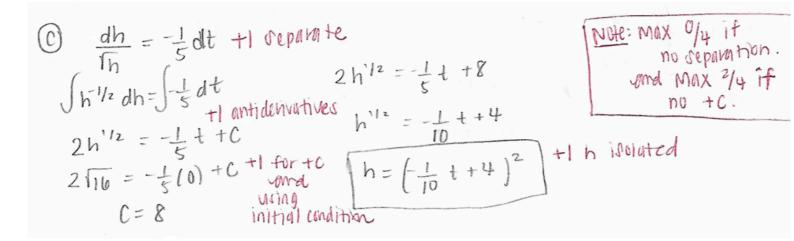
$$\begin{array}{rcl}
\left(b & \frac{d^2h}{dt^2} = -\frac{1}{5} \cdot \frac{1}{2} h^{-1/2} \cdot \frac{dh}{dt} & +2 \\
& = -\frac{1}{5} \cdot \frac{1}{2} h^{-1/2} \cdot \frac{dh}{dt} & +2 \\
& = -\frac{1}{10} \cdot \frac{1}{5} \cdot \left(-\frac{1}{5} \int h \right) \\
& = \frac{1}{10} \cdot \frac{1}{50} \cdot \frac{1}{50} \cdot \frac{1}{50} = \frac{1}{50}
\end{array}$$

dr = 0 since r-is constant.

+1 dV expression at ensurer w/unito

-2 derivative up chain and implicit

pote of change of height in increasing since $\frac{d^2h}{dt^2}$ in positive $\frac{d^2h}{dt^2}$ the answer wy reason



Suggested Scoring:

Raw Score:	Exam Score:
14-23	5
12-13	4
9-11	3
6-8	2
0-5	1

As previously mentioned, College Board has not predetermined the scores needed to earn a 3,4, or 5 for this year. Instead, they will curve the scores to match the percentages of previous years. However, Q1 will be worth 60% of your overall score and Q2 will be worth 40%. This rubric is just meant to be a helpful tool to gauge your performance.