

Solutions:

3. a) $\frac{22}{3}$

b) $\int_0^2 2y(6-y-y^2)dy$

c) $(\frac{1}{4}, \frac{1}{2})$

4. a) $x=4$ (Rel. Max.)

b) $0 < x < 6$

c) $f(x) = 3 - \frac{2}{x^2} + \frac{1}{x}$

Max.



c. Down
 $f''(x) < 0$



Min.
 $f''(x) > 0$
c. Up

5. a) 0.03 m/s^2

b) 139 m

c) use MVT

d) $\frac{3}{2} \text{ m/s}$

6. a) $6\pi^2$

b) $x=0$ to $x=\pi$

c) 3π

