

Answer key, 169 exam 2003

1. b) $\delta = 2\varepsilon$

2. $k = 1/2$

4. $y = (1/2)x + 1$

5. $r = \sqrt{\frac{2}{3}}R, h = \frac{2}{\sqrt{3}}R$

6. a) $f^{(n)}(x) = (-1)^n \frac{n!}{x^{n+1}}$

b) $P_n(x) = 1 - (x-1) + (x-1)^2 - \dots + (-1)^n (x-1)^n$

8. b) $F'(1) = 1$ c) F increasing since $F'(1) > 0$

9. a) $1/3$ b) $x \cos^{-1}x - \sqrt{1-x^2} + c$ c) $\frac{1}{2\sqrt{3}}$

10. a) π

11. $\frac{3a}{2}$