

NAME: _____

Math 163 (Cowen)

Test 2 (Retake)

22 February 2008

There are 5 pages and 20 questions. No partial credit! Scoring will be '100' for all correct or exactly one incorrect, '90' for 2 incorrect, '80' for 3 incorrect, etc., to '-90' for all incorrect.

You will have 1 hour to complete this test!

For each question, find the derivative of the given function.

(10 points) 1. $f(x) = 3x^4 - \frac{x^3}{4} + 23.9x + \sqrt{2}$
 $f'(x) =$

(10 points) 2. $g(t) = 3\sqrt{t^9} + \frac{6}{\sqrt[5]{t}} - \frac{7}{t^6}$
 $g'(t) =$

(10 points) 3. $y = \frac{t^3 - 4t^4}{7 - 3t}$
 $y' =$

(10 points) 4. $h(w) = \frac{2.8}{4w^5 - 3w^4 - 6w}$
 $h'(w) =$

(10 points) 5. $r(\theta) = 5 \cos \theta + 3 \sec \theta - 8 \tan \theta$
 $r'(\theta) =$

(10 points) 6. $f(t) = 8t^5 \cos t$
 $f'(t) =$

(10 points) 7. $h(w) = \frac{2w^5 + \cot w}{\sin w - \cos w}$
 $h'(w) =$

(10 points) 8. $y = 3x^2 \sec x \tan x$
 $y' =$

(10 points) 9. $h(\theta) = 5 \cos 4\theta - 8 \tan 3\theta$
 $h'(\theta) =$

(10 points) 10. $f(t) = \sqrt[4]{9 - 2t^3}$
 $f'(t) =$

(10 points) 11. $y = (x - 2x^3)^{10}$
 $y' =$

(10 points) 12. $g(s) = \sqrt{s + 7 \tan \pi s}$
 $g'(s) =$

(10 points) 13. $F(y) = \frac{5}{(6 + 3y^5)^4}$
 $F'(y) =$

(10 points) 14. $z = \cos\left(\frac{3}{\sqrt[4]{v}}\right)$
 $z' =$

(10 points) 15. $h(u) = (5 + 8u)^3(1 - 2u)^7$
 $h'(u) =$

(10 points) 16. $G(w) = 3 \sec(w/5)$
 $G'(w) =$

(10 points) 17. $T(r) = \frac{4r}{\sqrt{1+r^6}}$
 $T'(r) =$

(10 points) 18. $f(z) = \sqrt{\frac{4-z}{4+3z}}$
 $f'(z) =$

(10 points) 19. $y = (5 + \cos^3 x)^4$
 $y' =$

(10 points) 20. $B(t) = \sqrt{5 + \cos(1+t^6)}$
 $B'(t) =$