MidTerm --sample--

Qsci 291
Fall 1999
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Total points = 100; 10 pts for each of the 10 correct answers. Star the problems you want corrected; otherwise we correct the first 10 as they appear in your answer sheet. Do the required number of problems in each section.

Find the derivatives of the given functions

PART I: Do any 3 of the 6 problems

1. $v = \ln\left\{\frac{(z-1)(z-2)}{(3z-4)}\right\}$

2. $y = (2x-1)/(3x^2-4)$

3. $w = (3-5u^2)^7$

4. $s = 0.15t^{0.35} + 0.85t^{0.65}$

5. $s = \sqrt{3t} + \frac{9}{t^3}$

6. $y = (1-x)(1+x^2)(2-x^3)$

PART II: Do any 3 of the 6 problems

$q = \frac{1}{2} e^{-\frac{1}{2}x^2}$

8. $x = 2^{2t}$

$w = \arctan\left(\frac{u}{3}\right)$

10. $w = \sin\left(\frac{1}{2}t^2\right) + \frac{1}{2}$

11. $h = x^3 + \cos(3x) + \ln(x^5)$

12. $p = \dfrac{e^x + e^{-x}}{e^x - e^{-x}}$

PART III: Do any 4 of the 8 problems

13. $y = e^x \cdot \sin(x)$

14. $y = \ln(x^2 - 4)$

15. $y = \ln(e^{\sqrt{x}})$

16. $y = \ln\left(\tan\left(\frac{\pi}{4}x\right)\right)$

17. $y = \frac{1}{2}\sin(2x) + \frac{1}{3}\cos(3x)$

18. $y = \ln(x^2 \cdot e^{3x})$

19. $y = \arcsin(x^2 + 1)$

20. $y = e^{2-x} + \ln(\sin(x))$