Homework #2   Final Answers

1. 0

2. $e^x + ex^{e-1}$

3. $\dfrac{-4e^{2x}}{(1+e^{2x})^2}$

4. $e^{\sin(2x)} \cos(2x) \cdot 2 + \cos(e^{2x}) e^{2x} \cdot 2$

5. $\dfrac{e^{\sqrt{x}}}{2\sqrt{x}}$

6. $e^{-1/x}\left(1 + 2x\right)$

7. $\dfrac{3e^{3x}}{1+e^{3x}}$

8. $-\dfrac{1}{x} - \dfrac{1}{x(\ln x)^2}$

9. $\ln\left(\dfrac{\sqrt{x}}{x+1}\right)$

10. $x = \dfrac{7 - \ln 6}{4}$

11. $x = \dfrac{e^2 + 10}{3}$

12. $-\infty$

13. $-\infty$

14. $e^x + \dfrac{x^{e+1}}{e+1} + C$

15. $\dfrac{15}{32}$

16. $-e^{-x} + 2x + e^x + C$

17. $\dfrac{e^{2x}}{2} + 2x - \dfrac{e^{-2x}}{2} + C$

18. $\ln(1+e^x) + C$

19. $-\dfrac{1}{4}\ln\left(\dfrac{7}{3}\right) \overset{OR}{=} \dfrac{1}{4}\ln\left(\dfrac{3}{7}\right)$

20. $\dfrac{8}{3}$