

1.  $\left(\frac{4}{3}, \frac{353}{27}\right)$

2.  $\frac{x^{4x}}{2} \left(4 + 4\ln\left(\frac{x}{2}\right)\right)$

3.  $\frac{1012\pi}{45}$

4.  $\frac{100}{3}$

5. 0

6.  $4\tan^2(x)\sec^2(x) + 2\sec^4(x)$  or  
 $\sec^2(x)(4\tan^2(x) + 2\sec^2(x))$

7.  $\frac{3277}{8748}$

8.  $\frac{900}{\pi}$

9. 13

10.  $xe^x(x-1)$  or  $x^2e^x - e^x$

11.

$\frac{2e^{2x}}{x} \left(-\tan(\ln(3x^2))\right) + 2e^{2x} \ln(\cos(\ln(3x^2)))$

12.  $(-\infty, -1/6) \cup (1/2, \infty)$

13. 0

14.  $y = \frac{11}{6}x - \frac{4}{3}$

15.  $x = \frac{x^3}{3!} + \frac{x^5}{5!}$

16.  $-\frac{1}{2} |\ln|\cos 2x|| + C$

17.  $\frac{63}{10}$

18. 2704847285

19.  $-\cos x$

20.  $y' = \frac{y-1-2xy}{x^2-2y-x}$

21.  $4/3$

22.  $\frac{e^{3x}}{12} - \frac{\sin 2x}{2} + C$

23.  $\frac{-3\cos^3 t + 6\sin^2 t \cos t}{(4t^2 + 2)e^{2t} - 8}$

24. 1

25.  $e^3$