Worksheet 17
Answer Key_181

If there are two answers either one is fine. One is simplified slightly differently.
If you think there is an error, please let me know. I could have typed it wrong.

1. $f'(t)=\dfrac{\left(2-t^3\right)}{2\left(t^3+1\right)^{3/2}}=\dfrac{\left(2-t^3\right)\left(\sqrt{t^3+1}\right)}{2\left(t^3+1\right)^2}$

2. $f'(x)\dfrac{-\left(3+x^2\right)}{x^4}=-\dfrac{1}{x^2}-\dfrac{3}{x^4}$

3. $\dfrac{dz}{dx}=(x+1)^2(5-x)^3(11-7x)$

4. $f'(m)=-2\sin(2m)$

5. $f''(x)=15\ln 2\left(2^{5x}\right)(2+5x\ln 2)$

6. $f'(\Gamma)=\dfrac{\beta+6\Gamma^5}{1-\beta}$

7. $\dfrac{dy}{dt}=\dfrac{3}{t\ln\left(2t^3\right)}$

8. $g'(x)=\begin{cases}-e^x(1+x) & x<0\\ DNE & x=0\\ e^x(1+x) & x>0\end{cases}$

9. $x'(r)=\dfrac{1}{2\sqrt{r}}\left(\sqrt{3}+3+\dfrac{\sqrt{3}}{r}\right)$

10. $h'(y)=\dfrac{1}{y(1-\ln y)^2}$

11. $\dfrac{dz}{dm}=2$

12. $f'(x)=-4\pi\, ln(2)2^x\cos^3(\pi 2^x)\sin(\pi 2^x)$

13. $f'(t)=\dfrac{-2}{t\sqrt{t^2-4}}$

14. $g'(\theta)=\dfrac{1}{2\sqrt{3\theta+\tan^2(4\theta)}}\left(3+\dfrac{8\sin(4\theta)}{\cos^3(4\theta)}\right)$

15. $f'(x)=\cos\left(\sqrt[3]{x}+1\right)-\dfrac{\sqrt[3]{x}\sin\left(\sqrt[3]{x}+1\right)}{3}$

16. $\dfrac{dy}{du}=-\pi\left(\cot(1)+\dfrac{1}{\tan u}\right)^{\pi-1}\left(\csc^2 u\right)$

17 $g'(z)=\dfrac{e^{az}\left(a^3+az^2-2z\right)}{\left(a^2+z^2\right)^2}$

18. $f'(x)=\dfrac{ax(4+x)}{(2-x)^4}$

19. $a'(t)=\dfrac{8}{\sin t}$

$a''(t)=\dfrac{-8\cos(t)}{[\sin(t)]^2}=-8\cot(t)\csc(t)$

20. $L'(D)=\dfrac{-92}{D^2+92^2}$