Honors Calculus
Beginning Derivatives' Rules Name _____

Solve for $f'(x)$.

1. $f(x)=3x^5-6x^2+\frac{2}{3}x-7$

$f'(x)=15x^4-12x+2/3$

2. $f(x)=2-\frac{\pi}{4}\sin x$

$f'(x)=\frac{-\pi}{4}\cos x$

3. $f(x)=\frac{1}{x^4}$

$f'(x)=-4x^{-5}$

4. $f(x)=\sqrt[3]{x}$

$f'(x)=\frac{1}{3}x^{-2/3}$

5. $f(x)=\frac{2x+\sqrt{x}}{x^3}$

$f'(x)=-4x^{-3}-\frac{5}{2}x^{-7/2}$

6. $f(x)=\frac{3x^2}{4}+\cos x$

$f'(x)=\frac{3}{2}x-\sin x$

7. $f(x)=6x^{\frac{2}{3}}-3x^{\frac{1}{5}}+\frac{2}{5}x-7$

$f'(x)=4x^{-1/3}-\frac{3}{5}x^{-4/5}+\frac{2}{5}$

8. $f(x)=4-\frac{\pi}{2}\cos x$

$f'(x)=\frac{\pi}{2}\sin x$

9. $f(x)=\frac{1}{x^3}+\sec x-5\cot x$

$f'(x)=-3x^{-4}+\sec x\tan x+5\csc^2 x$

10. $f(x)=\sqrt[4]{x}+\frac{1}{3}\csc x$

$f'(x)=\frac{1}{4}x^{-3/4}-\frac{1}{3}\csc x\cot x$

11. $f(x)=\frac{\pi}{4}\cos x-\tan x$

$f'(x)=\frac{-\pi}{4}\sin x-\sec^2 x$

12. $f(x)=\frac{2x^2}{3}+\sin x$

$f'(x)=\frac{4}{3}x+\cos x$