1. $f(x) = \sin(\sqrt{x^2 + 1})$

$\dfrac{d}{dx} f(x) =$

2. $r(t) = \dfrac{1}{3t^2} - \sin^2(\dfrac{\pi}{3})$.

$r'(t) =$

3. $g(z) = \dfrac{f(z^2 + 2z + 3)}{z}$.

$f(1) = 7;$ $f'(1) = 4;$
$f(4) = -2;$ $f'(4) = 3;$
$f(6) = 1;$ $f'(6) = -5.$

$g'(1) =$

4. $y(x) = x^2 \cdot \tan(x^2)$

$$\frac{dy}{dx} =$$

5. $G(\alpha) = \sec\left(\frac{\alpha}{2} + \pi\right)$

$$\frac{dG}{d\alpha} =$$