

More on Derivatives Test Review Answers

1.  $f'(x) = 2x - 2$
2.  $f'(x) = \frac{1}{2\sqrt{x+1}}$  or  $\frac{\sqrt{x+1}}{2x+2}$
3.  $f'(x) = \frac{-4}{x^2}$
4.  $g'(-1) = \frac{-3}{2}$
5.  $h'(-2) = \frac{67}{8}$
6.  $f'(0) = -2$
7.  $f'(-1) = 3$
8.  $f'(x) = 3x^2 - 6x$
9.  $h'(x) = \frac{-4}{9x^3}$
10.  $h'(x) = \frac{3}{\sqrt{x}} + \frac{1}{\sqrt[3]{x^2}}$  or  $h'(x) = \frac{3\sqrt{x} + \sqrt[3]{x}}{x}$
11.  $f'(x) = -3\sin\theta - \frac{1}{4}\cos\theta$
12.  $g'(x) = \frac{5}{3}\cos\theta - 2$
13.  $f'(x) = 18x^5 - 150x^4 + 328x^3 - 210x^2 + 350x$
14.  $g'(x) = 4x^3 + 6x^2 - 6x - 6$
15.  $f'(x) = \frac{-6x^2 + 10x + 6}{(x^2 + 1)^2}$
16.  $f'(x) = \frac{18 - 54x}{(3x^2 - 2x)^2}$
17.  $y' = \frac{2x \sin 4x - 2 \sin^2 2x}{x^3}$
18.  $y' = 2 - 2x \tan x - x^2 \sec^2 x$
19.  $y = 4x - 3$
20.  $y = -2x + 2\pi + 1$
21.  $v(4) = 20m / \text{sec}$      $a(4) = -8m / \text{sec}^2$
22.  $g''(x) = 6t$
23.  $h''(t) = -4 \sin t + 5 \cos t$

[Type text]

$$24. y'' = 4 - 4\sin 2x$$

$$25. y'' = 2\cos 2x$$

$$26. y' = \frac{-2x^3 + 18x^2 - 34x - 6}{(x^2 + 1)^3}$$

$$27. f'(x) = \frac{(10x^3 - 5)(x^3 + 1)^4}{x^6}$$

$$28. y' = \frac{1 - \cos 2x}{2}$$

$$29. f'(x) = \frac{3}{(x^2 + 1)^{3/2}} \text{ or } \frac{3(x^2 + 1)^{1/2}}{(x^2 + 1)^2}$$

$$30. y' = \frac{\pi x \cos \pi x + 2\pi \cos \pi x - \sin \pi x}{(x + 2)^2}$$

$$31. y' = -9\sin(3x + 1)$$

$$32. f'(-2) = -2$$

$$33. f'(3) = \frac{1}{2}$$