

Exer. 1-5: Find the point-slope equation of the tangent line to  $f(x)$  at the given value of  $x$ .

1.  $f(x) = 2x^2 - 1, x = 5$

2.  $f(x) = \sin x, x = \frac{\pi}{3}$

3.  $f(x) = \frac{6}{x+2}, x = 1$

4.  $f(x) = \sqrt{x}, x = 9$

5.  $f(x) = x^3 - 2x, x = 2$

Exer. 5-10: Find:  $\lim_{h \rightarrow 0} \frac{f(x+h) - f(x)}{h}$ .

6.  $f(x) = \frac{3}{x-2}$

7.  $f(x) = \cos x$

8.  $f(x) = \sqrt{x-8}$

9.  $f(x) = 3x - 7$

10.  $f(x) = 21$