

## MCS21 Homework 22

In 1 – 9, find  $\frac{dy}{dx}$ .

1.  $y = \sin x$

2.  $y = \cos x$

3.  $y = \tan x$

4.  $y = (\tan x)(\sin x)$

5.  $y = x^3 \cos x$

6.  $y = 2x^5 - x \sin x$

7.  $y = \sqrt{x}(\tan x)$

8.  $y = \frac{5 + 3\sin x}{x^4 - 3}$

9.  $y = \frac{\cos x}{\sin x}$

10. At what value(s) of  $x$  in the interval  $0 \leq x < 2\pi$  does  $y = \sin x$  have a horizontal tangent line?