

Quotient Rule

Name:

Block:

Differentiate each function with respect to  $x$ .

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

2.  $A(x) = \frac{1}{x + \sqrt{x}}$

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

4.  $g(x) = \frac{x^2 + x}{x^3 + 1}$

5.  $h(x) = \frac{\sqrt{x} + \sqrt[3]{x}}{1 + x^2}$

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

7.  $f(x) = \frac{\sin x}{\cos x}$

8.  $r(x) = \frac{1}{\sin x}$

9.  $s(x) = \frac{1}{\cos x}$

10.  $u(x) = \frac{\cos x}{\sin x}$

11.  $v(x) = \frac{e^x}{x}$

12.  $a(x) = 4 \frac{x^4}{\sin x}$

13.  $u(x) = \frac{1 - x^{-3}}{\cos x}$

14.  $f(x) = \frac{\frac{1}{2}x^2 + x - 3}{3 \ln x}$

15.  $f(x) = \frac{x \ln x}{e^x}$

16.  $p(x) = \frac{1 + \sin x}{\sqrt{x} + x}$

17.  $g(x) = \frac{2 \sin x \cos x}{x}$

18.  $h(x) = \frac{(1 + x^2) \sin x}{1 - \cos x}$

19.  $u(x) = 2x^2 \frac{\ln x}{1 - x^{-2}}$

20.  $f(x) = \frac{e^x \sqrt[3]{x}}{x^2 + 3}$