

MAC 2312 Review CI

1) Find $g'(x)$ if $g(x) = \frac{1}{(1-x^2)}$.

2) Find the derivative of $y(x) = \frac{(x+1)^4}{2x-3}$.

3) A cylindrical can with a top is to have a volume of 2π *cu in.* What should be the dimensions of the can in order to minimize the total surface area of the can?

4) Find $y'(\frac{\pi}{6})$ if $y(x) = \cos^4(x)$.

5) Give the equation of the line of on the graph of $f(x) = \tan(x)$ at $x = \frac{\pi}{3}$.

6) Evaluate $\int \frac{t^2}{\sqrt{t+10}} dt$

7) Find the area of the region between $y = x^2$ and $y = x^3$.

8) Evaluate $\int_0^1 \frac{\sin(\theta)}{\sqrt{\cos(\theta)}} d\theta$.