

Precalculus Review

(1.) Simplify $\frac{3x^2+3x+3}{x^3-1}$.

(2.) Write $\sin(x+h) - \sin(x)$ in terms of $\sin(x)$, $\sin(h)$, $\cos(x)$ and $\cos(h)$ and simplify.

(3.) Rationalize the denominator of $\frac{x-1}{\sqrt{x^2-1}-\sqrt{x-1}}$ and simplify.

(4.) Simplify: $\log_5 \left[\frac{(3x^2 - 4x)(x^4)}{4x^2} \right]$.

(5.) Suppose that $r = 3$ and $h = 5$.

(a.) Find the surface area of the right cylinder of radius r and height h .

(b.) Find the volume of the right cone whose base has radius r and height h .

(6.) In the triangle in figure 1, write r_2 in terms of r_1, h_1 and h_2