

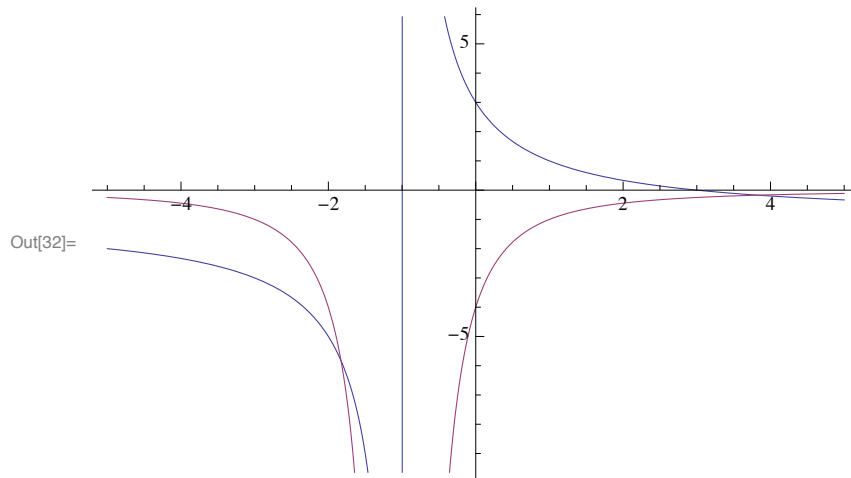
In[29]:= (\* Quiz 7 | AP Calculus BC \*)  
**g[x\_]** := (3 - x) / (x + 1);  
**Simplify**[(g[x + h] - g[x]) / h]

Out[30]= 
$$-\frac{4}{(1+x)(1+h+x)}$$

In[31]:= **Limit**[% , {h → 0}]

Out[31]= 
$$\left\{ -\frac{4}{(1+x)^2} \right\}$$

In[32]:= **Plot**[{g[x], g'[x]}, {x, -5, 5}]



(\* Quiz 7 | AP Calculus BC \*)

In[1]:= **f[x\_]** := (1 / x) + (Sqrt[1 - x]);

In[25]:= **Simplify**[(f[x + h] - f[x]) / h]

Out[25]= 
$$\frac{-\sqrt{1-x} + \sqrt{1-h-x} - \frac{1}{x} + \frac{1}{h+x}}{h}$$

In[26]:= **Limit**[% , {h → 0}]

Out[26]= 
$$\left\{ -\frac{1}{2\sqrt{1-x}} - \frac{1}{x^2} \right\}$$

In[28]:= **Plot**[{**f**[**x**], **f**' [**x**]}, {**x**, -3, 3}, **PlotRange** → {-6, 6}]

