

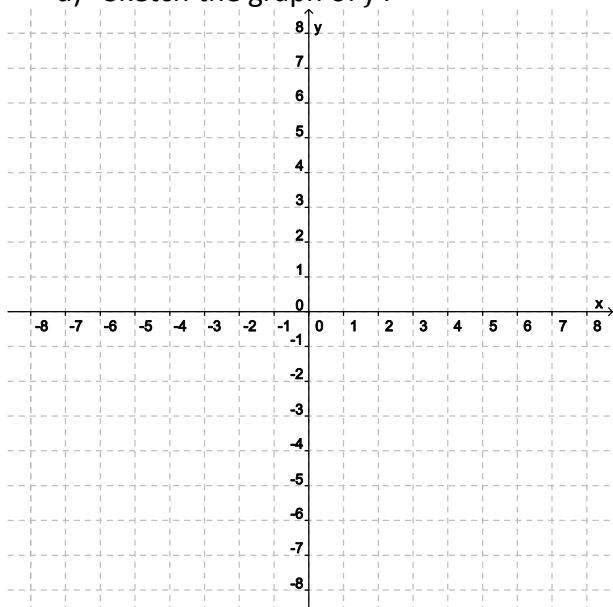
1. Let  $f(x) = \frac{2x^2+5x-3}{x^2+x-2}$ .

a) Find the domain of  $f$ .

b) Find the  $x$ -intercept(s) and  $y$ -intercept of  $f$  (if any).

c) Find all vertical, horizontal, and slant asymptotes of  $f$ . If none, write “none”. Also, be sure to show your analysis on each side of each vertical asymptote (if any).

d) Sketch the graph of  $f$ .



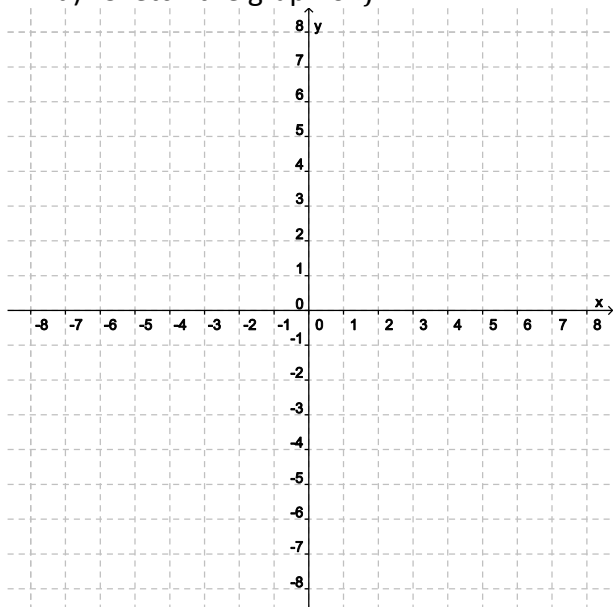
2. Let  $f(x) = \frac{x+2}{2x^2-x-3}$ .

a) Find the domain of  $f$ .

b) Find the  $x$ -intercept(s) and  $y$ -intercept of  $f$  (if any).

c) Find all vertical, horizontal, and slant asymptotes of  $f$ . If none, write "none". Also, be sure to show your analysis on each side of each vertical asymptote (if any).

d) Sketch the graph of  $f$ .



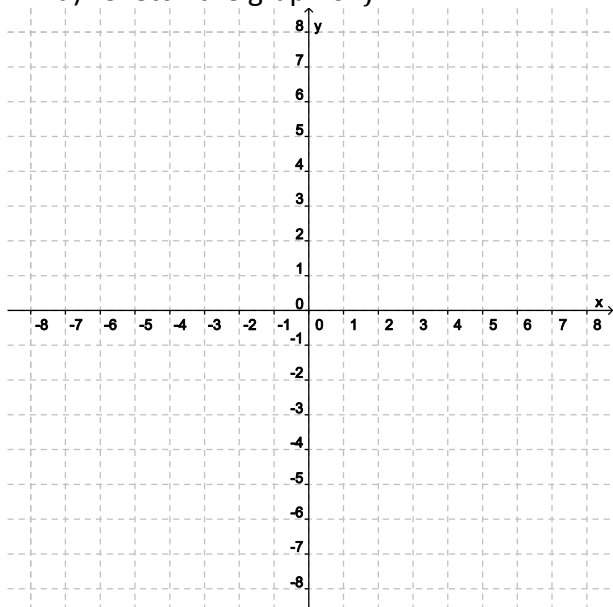
3. Let  $f(x) = \frac{2x}{x^2+1}$ .

a) Find the domain of  $f$ .

b) Find the  $x$ -intercept(s) and  $y$ -intercept of  $f$  (if any).

c) Find all vertical, horizontal, and slant asymptotes of  $f$ . If none, write "none". Also, be sure to show your analysis on each side of each vertical asymptote (if any).

d) Sketch the graph of  $f$ .



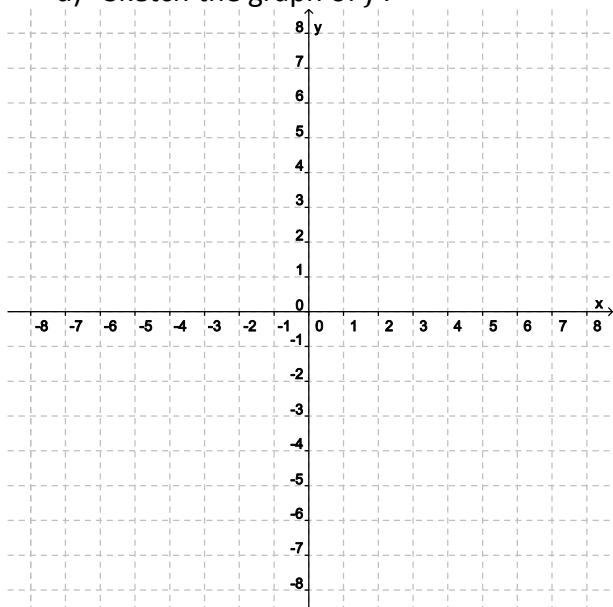
4. Let  $f(x) = \frac{2x^2 - 4x - 6}{x^2 + 2}$ .

a) Find the domain of  $f$ .

b) Find the  $x$ -intercept(s) and  $y$ -intercept of  $f$  (if any).

c) Find all vertical, horizontal, and slant asymptotes of  $f$ . If none, write "none". Also, be sure to show your analysis on each side of each vertical asymptote (if any).

d) Sketch the graph of  $f$ .



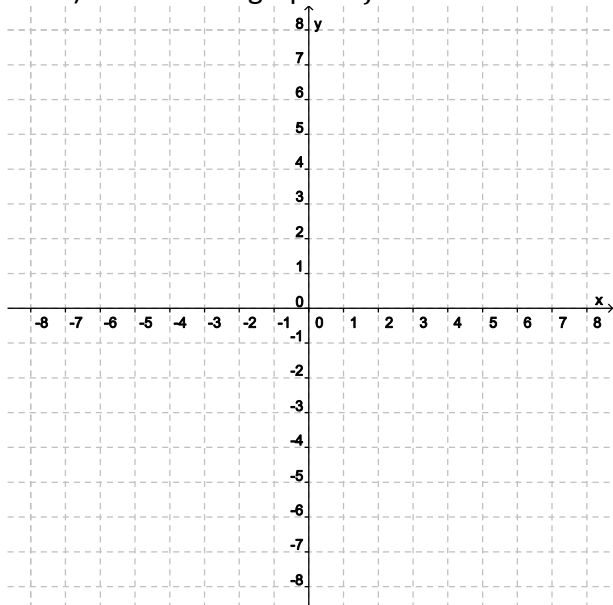
5. Let  $f(x) = \frac{4}{x^2+4x+4}$ .

a) Find the domain of  $f$ .

b) Find the  $x$ -intercept(s) and  $y$ -intercept of  $f$  (if any).

c) Find all vertical, horizontal, and slant asymptotes of  $f$ . If none, write "none". Also, be sure to show your analysis on each side of each vertical asymptote (if any).

d) Sketch the graph of  $f$ .



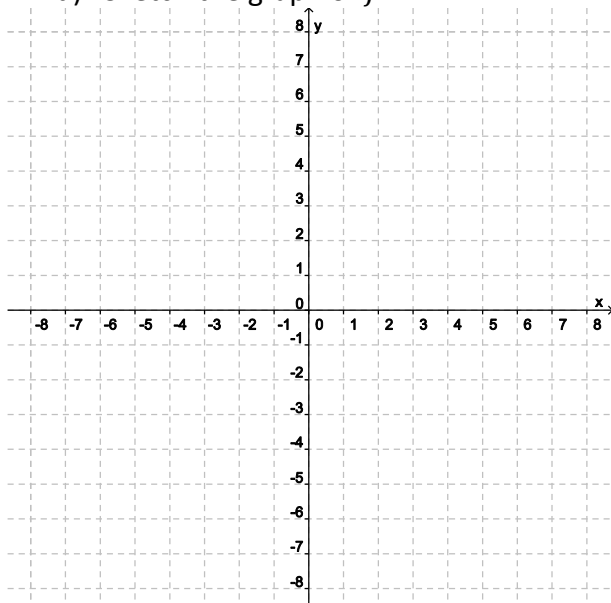
6. Let  $f(x) = \frac{x-1}{x^2(x-2)^2}$ .

a) Find the domain of  $f$ .

b) Find the  $x$ -intercept(s) and  $y$ -intercept of  $f$  (if any).

c) Find all vertical, horizontal, and slant asymptotes of  $f$ . If none, write "none". Also, be sure to show your analysis on each side of each vertical asymptote (if any).

d) Sketch the graph of  $f$ .



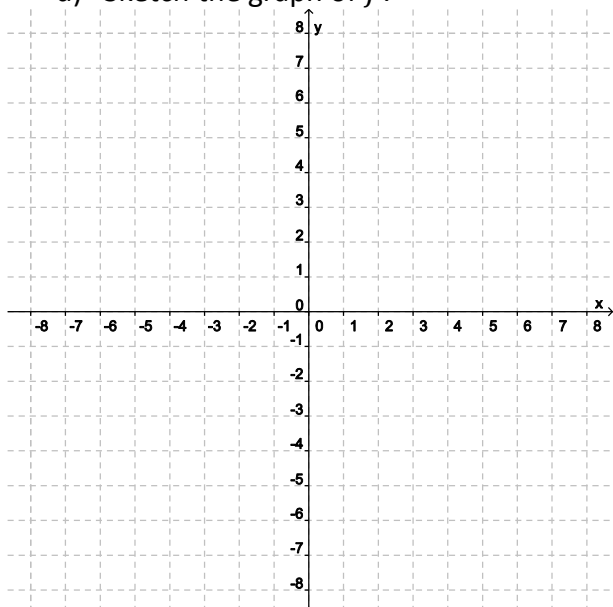
7. Let  $f(x) = \frac{x^3 + 3x^2}{x^2 - 4}$ .

a) Find the domain of  $f$ .

b) Find the  $x$ -intercept(s) and  $y$ -intercept of  $f$  (if any).

c) Find all vertical, horizontal, and slant asymptotes of  $f$ . If none, write "none". Also, be sure to show your analysis on each side of each vertical asymptote (if any).

d) Sketch the graph of  $f$ .



8. Let  $f(x) = \frac{x^3-1}{x^2-x-2}$ .

a) Find the domain of  $f$ .

b) Find the  $x$ -intercept(s) and  $y$ -intercept of  $f$  (if any).

c) Find all vertical, horizontal, and slant asymptotes of  $f$ . If none, write "none". Also, be sure to show your analysis on each side of each vertical asymptote (if any).

d) Sketch the graph of  $f$ .

