PREC12 Rational Functions Name: _____

Worksheet

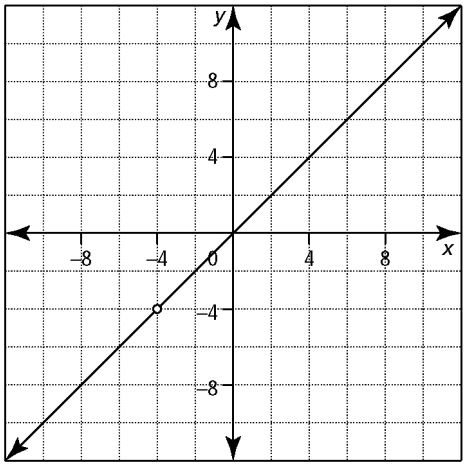
Analyze each function and predict the location of any VERTICAL asymptotes, HORIZONTAL asymptotes, HOLES (points of discontinuity), *x*- and *y*-INTERCEPTS, DOMAIN, and RANGE.

Characteristic	$y = \frac{2x-1}{x-7}$	$y = \frac{x^2+5x}{x^2+7x+10}$	$y = \frac{x^2-7x+12}{x^2-9}$	$y = \frac{2x^2+5x-3}{x+3}$
Vertical Asymptote(s) *Analyze Denominator*				
Horizontal Asymptote(s) *Analyze Degrees of Polynomial (num/den) (m<n, m=n, m>n)*				
HOLES Point(s) of Discontinuity *Simplify the Rational Function by factoring*				
x-intercept(s) *Set y=0*				
y-intercept *Set x=0*				
Domain				
Range				

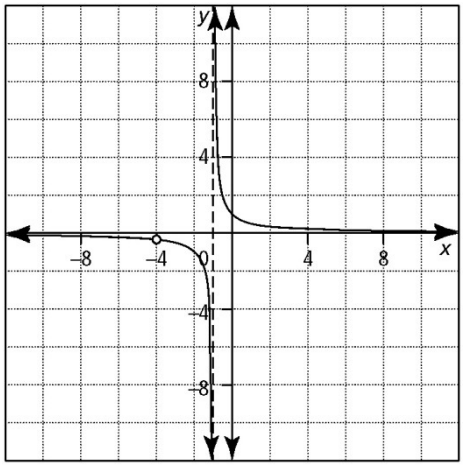
Match the equation of each rational function with the most appropriate graph. Explain your reasoning.

$$y = \frac{x+4}{x^2-3x-4} \qquad y = \frac{x+4}{x^2+5x+4} \qquad y = \frac{x^2+4x}{x+4}$$

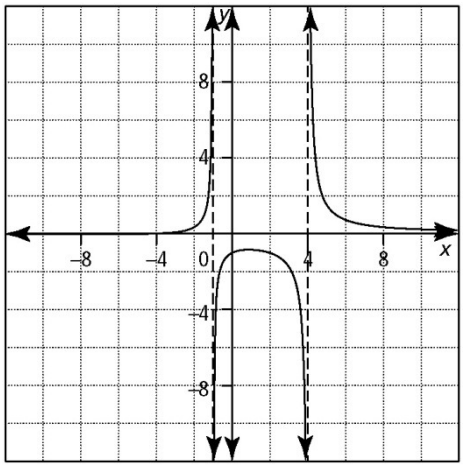
A



B



C



Complete the assignment on pp.134 to 136: # 1 to 4 first before trying the questions below:

Write the equation for each graphed rational function.