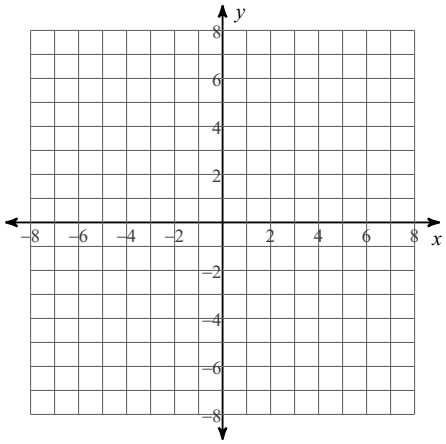
Algebra 2 Honors March 11, 2019 Name_____

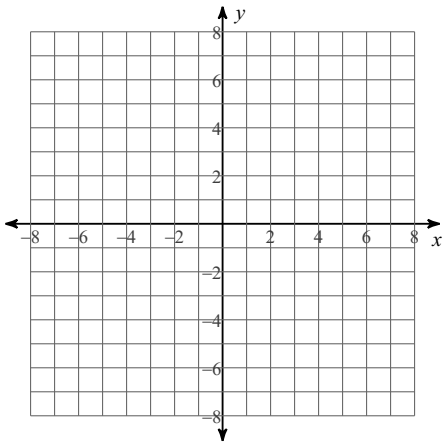
Graphing Rational Functions: Slant Asymptotes

Identify the:
1. domain
2. Discontinuities
3. holes
4. x-intercepts
5. y-intercept
6. vertical asymptote(s)
7. SLANT ASYMPTOTE: If the degree of the numerator is exactly one more than the degree of the denominator, there is no horizontal asymptote but there is a slant asymptote. Long divide to find the equation of the slant asymptote. (y = mx + b)
8. end-behavior
Then sketch the graph.

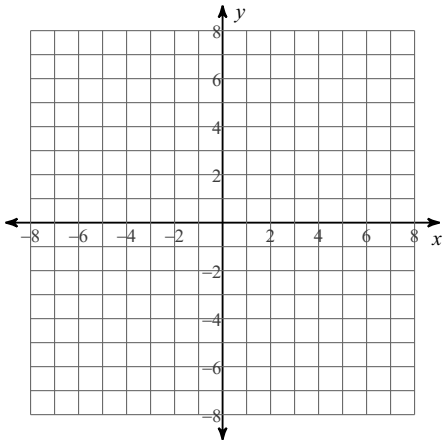
1) $f(x) = \dfrac{x^3 - 3x^2 + 2x}{4x^2 - 24x + 32}$



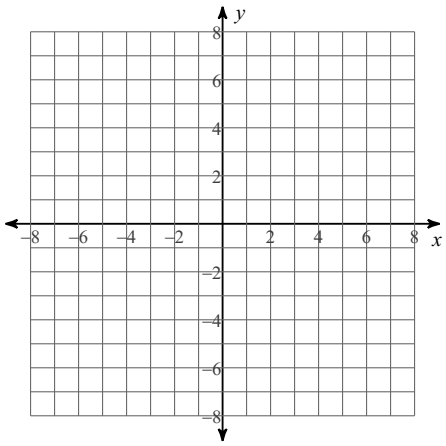
2) $f(x) = \dfrac{x^3 + x^2 - 12x}{-3x^2 + 3x}$



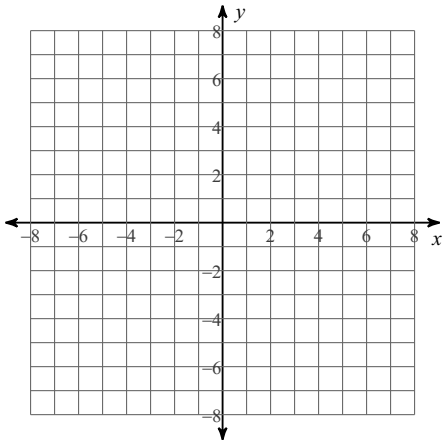
3) $f(x) = \dfrac{x^2 - x - 6}{2x - 2}$



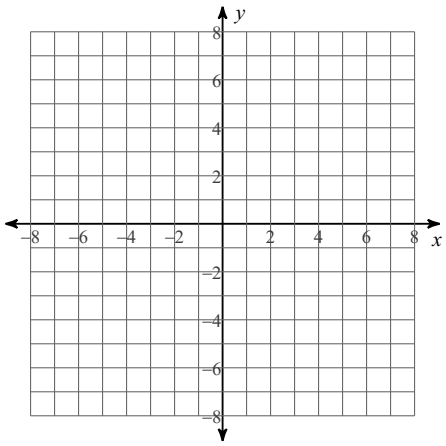
4) $f(x) = \dfrac{x^2 - 2x}{3x - 9}$



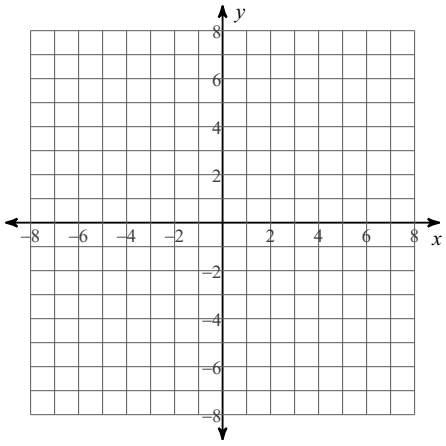
5) $f(x) = \dfrac{x^2 - 2x - 8}{-3x + 6}$



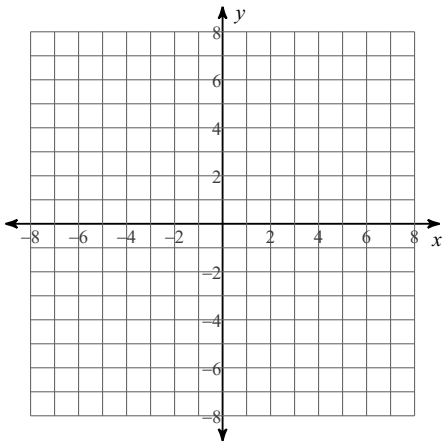
6) $f(x) = \dfrac{x^2 + 5x + 4}{4x + 8}$



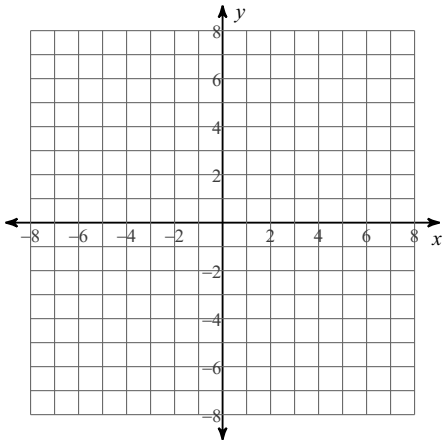
7) $f(x) = \dfrac{x^3 + x^2 - 6x}{-4x^2 - 4x + 8}$



8) $f(x) = \dfrac{x^3 + 3x^2 + 2x}{-4x^2 + 8x + 12}$



9) $f(x) = \dfrac{x^3 + 5x^2 + 4x}{-4x^2 + 4x}$



10) $f(x) = \dfrac{x^2 - 4}{-2x}$