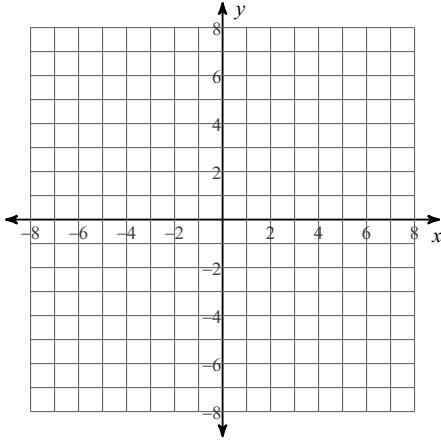


## Graphing Rational Expressions

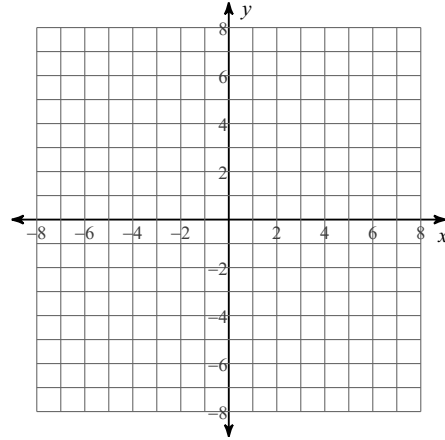
Date \_\_\_\_\_ Period \_\_\_\_\_

Identify the holes and vertical asymptotes of each. Then sketch the graph.

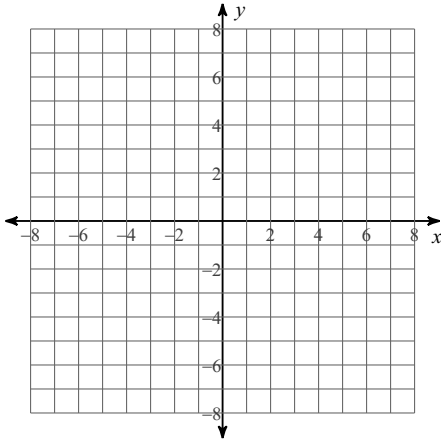
1)  $f(x) = \frac{x^3 - x}{4x^2 - 8x}$



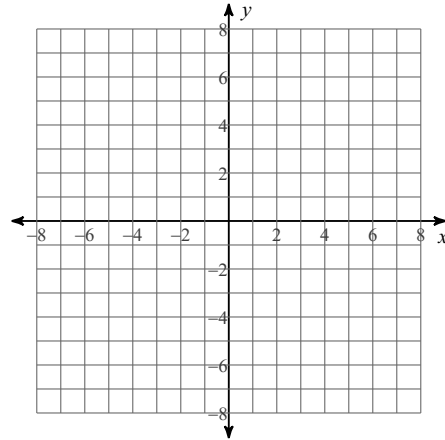
2)  $f(x) = \frac{-x^2 - 3x + 4}{x^2 + x - 12}$



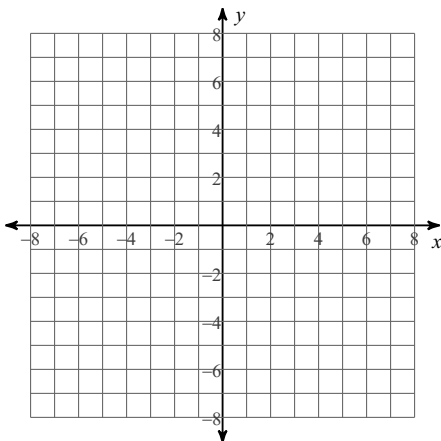
3)  $f(x) = \frac{-x + 1}{x + 1}$



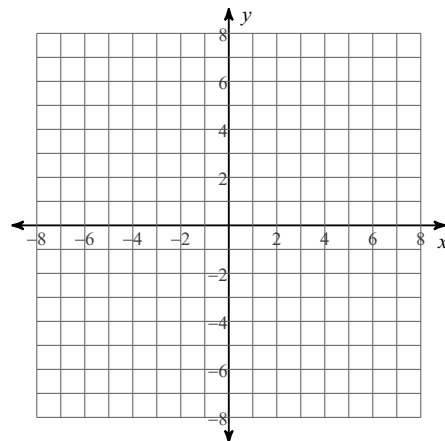
4)  $f(x) = -\frac{4}{x - 1}$



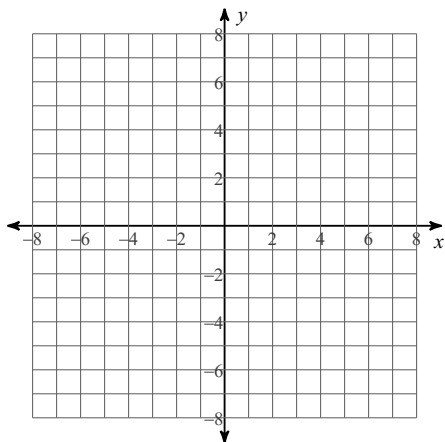
5)  $f(x) = \frac{x^2 + 2x - 3}{3x + 3}$



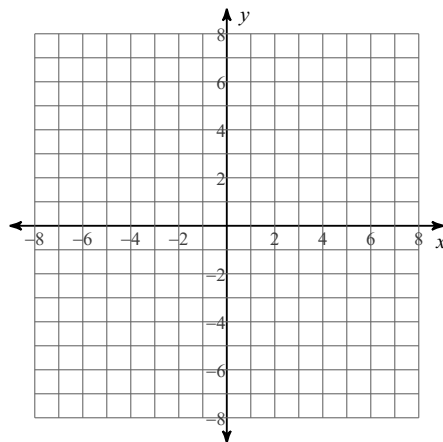
6)  $f(x) = \frac{1}{-4x - 16}$



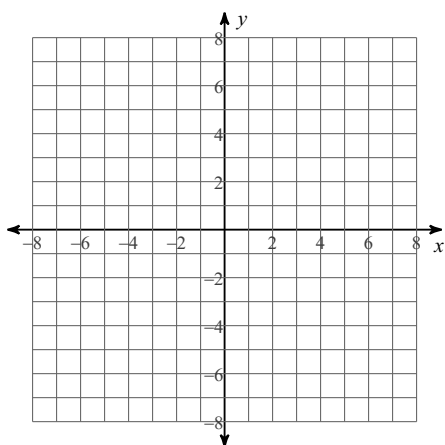
$$7) f(x) = \frac{1}{x+4}$$



$$8) f(x) = \frac{x^2 - x - 12}{-4x^2 - 20x - 24}$$



$$9) f(x) = \frac{x^2 - x - 2}{2x - 2}$$



$$10) f(x) = \frac{x^3 + x^2 - 6x}{-3x^2 + 6x + 9}$$

