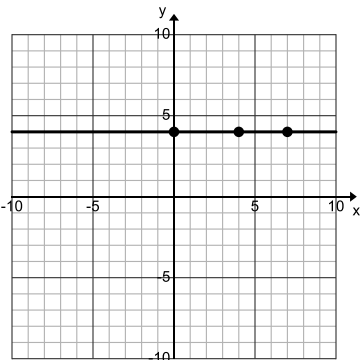
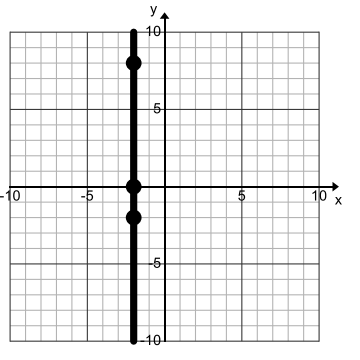


ALL ANSWERS ON FUTURE ASSIGNMENTS AND ASSESSMENTS MUST BE IN PROPER FORMAT

Lines are stated as lines and points are stated as points

BAD example	GOOD example
1. $f(x) = \frac{x^2-4x}{3x^2-27}$	1. $f(x) = \frac{x^2-4x}{3x^2-27} = \frac{x(x-4)}{3(x-3)(x+3)}$
X intercept(s) 4	X intercept(s) (4,0) or (0,0)
Y intercept???? or blank	Y intercept (0, 0)
Horizontal asymptote $\frac{1}{3}$	Horizontal asymptote $y = \frac{1}{3}$
Vertical asymptote 3 or -3	Vertical asymptote $x = 3$ or $x = -3$

<p>To find the y intercept of any function</p> <ol style="list-style-type: none"> 1) Evaluate the function at $x = 0$ <p>To find the x intercepts of a rational function</p> <ol style="list-style-type: none"> 1) Factor the numerator 2) Factor the denominator 3) Check to see if a hole is present FIRST 4) Cancel off any common terms 5) Set remaining factors from NUMERATOR equal to 0 and solve for x (these numbers are the x intercepts) 6) STATE as a POINT (x, 0) 	<p>To determine if a rational function has a hole</p> <ol style="list-style-type: none"> 1) Factor both the numerator and denominator 2) Does the numerator and denominator have a factor that has a variable in common? 3) If YES on 2) then a hole is present on the graph of the rational function 4) If YES on 2) set canceled factor equal to zero and solve for x (this is the x of your hole and a domain restriction) 5) If YES on 2) replace x in NEW version of rational function with the solution you just found in 4) 	<p>To find vertical asymptotes of a rational function</p> <ol style="list-style-type: none"> 1) Factor the numerator 2) Factor the denominator 3) Check to see if a hole is present FIRST 4) Cancel off any common terms 5) Set remaining factors from DENMINATOR equal to 0 and solve for x (these numbers are the x values of the vertical asymptotes & domain restrictions) 6) STATE as an EQUATION $x = \underline{\hspace{2cm}}$
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 <p>State the equation of the given line _____</p> <p>State the intercept as a point _____</p>	 <p>State the equation of the given line _____</p> <p>State the intercept as a point _____</p>	<p>Vertical lines take the form $X = \text{some number}$</p> <p>All points on a vertical line take the form (fixed number, any number y)</p> <p>$X = 0$ special example = y axis</p> <p>Horizontal lines take the form $y = \text{some number}$</p> <p>All points on a vertical line take the form (any number x, fixed number)</p> <p>$Y = 0$ special example = x axis</p>
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(if NONE, then state so)

1. $f(x) = \frac{x^2 - 10x}{3x + 30}$

X intercept(s) _____

Y intercept _____

Horizontal asymptote _____

Vertical asymptote _____

Does this rational function have a hole? _____

If this rational function has a hole, then state it _____

2. $g(x) = \frac{5x + 40}{x^2 - 64}$

X intercept(s) _____

Y intercept _____

Horizontal asymptote _____

Vertical asymptote _____

Does this rational function have a hole? _____

If this rational function has a hole, then state it _____

3. $h(x) = \frac{-9x^2 + 36x}{x^2 - 36}$

X intercept(s) _____

Y intercept _____

Horizontal asymptote _____

Vertical asymptote _____

Does this rational function have a hole? _____

If this rational function has a hole, then state it _____

4. $j(x) = \frac{-6x - 12}{2x + 18}$

X intercept(s) _____

Y intercept _____

Horizontal asymptote _____

Vertical asymptote _____

Does this rational function have a hole? _____

If this rational function has a hole, then state it _____

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

X intercept(s) _____

Y intercept _____

Horizontal asymptote _____

Vertical asymptote _____

Does this rational function have a hole? _____

If this rational function has a hole, then state it _____

6. $m(x) = \frac{x^3 + 4x^2 - 12x}{2x^2 - 10x}$

X intercept(s) _____

Y intercept _____

Horizontal asymptote _____

Vertical asymptote _____

Does this rational function have a hole? _____

If this rational function has a hole, then state it _____

7. $m(x) = \frac{x^2 + 10x - 11}{x^3 - 121x}$

X intercept(s) _____

Y intercept _____

Horizontal asymptote _____

Vertical asymptote _____

Does this rational function have a hole? _____

If this rational function has a hole, then state it _____