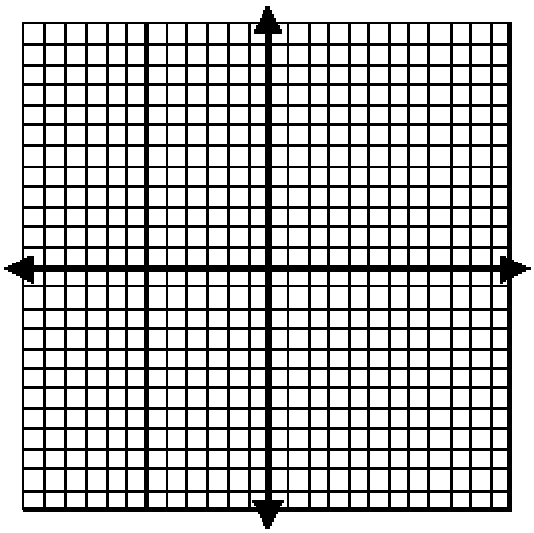
Name: _____
Period: _____

Advanced Math Week #7
Distributed Practice
Due Friday March 12th

1. List all discontinuities (vertical asymptotes or holes) as well as horizontal asymptotes for the graph

$$f(x) = \frac{x-3}{x^2+2x-15}$$



2. The table below represents the number of people waiting in line to buy concert tickets that went on sale at noon (t = 0). The concert sold out within 9 hours. Use the data in the table to estimate **the rate** at which people were joining or leaving the line at 5:30 P.M. or t = 5.5

t (hours)	0	1	3	4	7	8	9
$L(t)$ (people)	120	156	176	126	150	80	0

3. Solve the equation $\ln(2x) - \ln(2x-1) = \ln 4$

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4. Ames has 20 basketball players tryout for the season. A 10-member team and a captain (for a total of 11 players on the squad) will be selected out of these 20 players. How many different selections can be made?

5. Evaluate $\left(1+\sqrt{3}i\right)^8$. State your answer in polar as well as rectangular form.

6. Find the equation of the tangent to $f(x) = -x^3 - 3x + 8$ at $(2, -6)$.

7. A Ferris wheel has a maximum height of 47 m and a minimum height of 7 meters. The wheel rotates once every 65 seconds. Find a function $H(t)$ that gives the height of a person t seconds after they reach the top of the Ferris wheel.