

SHEET # 431:
REVIEW QUESTIONS

NAME =

KEY

PERIOD: _____

1. a) FIND SUCCESSIVE AVERAGE RATES OF CHANGE
 $t=0$ to $t=2$, $t=2$ to $t=4$, etc.
 b) IS $f(t)$ CONCAVE UP OR CONCAVE DOWN?

t	0	2	4	6	8
$f(t)$	-7	-5	-2	3	9
Δf		2	3	5	6
$\Delta f / \Delta t$		$\boxed{1}$	$\boxed{3/2}$	$\boxed{5/2}$	$\boxed{3}$

CONCAVE UP
 RATE OF CHANGE
 IS INCREASING

2+3. FIND THE ANSWERS FOR THE TWO FUNCTIONS

a, ASYMPTOTE(S)

b, Y-INTERCEPT(S)

c, ZERO(ES)

d, DOMAIN

e, RANGE

f, $f(2)$ or $g(2)$

g, Solve for x :
 $f(x) = 1$
 or
 $g(x) = 1$.

2. $f(x) = 3 \ln(x+5) - 2$

$\boxed{x = -5}$

$3 \ln(5) - 2 \approx \boxed{2.828}$

$3 \ln(x+5) - 2 = 0$

$\ln(x+5) = 2/3$

$x+5 = e^{2/3}$

$x = e^{2/3} - 5 \approx \boxed{-3.052}$

$\boxed{x > -5}$

$\boxed{\text{all } y}$

$f(2) = 3 \ln(7) - 2 \approx \boxed{3.838}$

$3 \ln(x+5) - 2 = 1$

$3 \ln(x+5) = 3$

$\ln(x+5) = 1$

$x+5 = e^1$

$x = e - 5$

$\approx \boxed{-2.282}$

3. $g(x) = 3e^{x-5} - 2$

$\boxed{y = -2}$

$3e^{-5} - 2 \approx \boxed{-1.980}$

$3e^{x-5} - 2 = 0$

$e^{x-5} = 2/3$

$x-5 = \ln(2/3)$

$x = \ln(2/3) + 5 \approx \boxed{4.595}$

$\boxed{\text{all } x}$

$\boxed{y > -2}$

$g(2) = 3e^{-3} - 2 \approx \boxed{-1.851}$

$3e^{x-5} - 2 = 1$

$3e^{x-5} = 3$

$e^{x-5} = 1$

$x-5 = \ln(1)$

$\boxed{x = 5}$