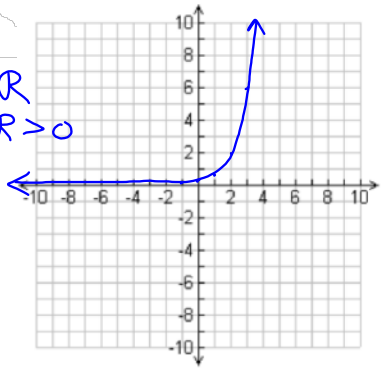
Graph the function. State the domain and range. (4)

1. $y = 2 \cdot 3^{x-2}$

x	y
-1	.07
0	0.2
1	0.7
2	2
3	6

D: R
R: R > 0



2. Consider $y = 34(1.06)^x - 6$.

a) What is the initial amount? 34 (1)

b) Is this function growth or decay? growth (1)

c) What is the growth factor? 1.06 (1)

d) What is the percent increase? 6 (1)

e) What is the equation for the asymptote? $y = -6$ (1)

3. You deposit $1200 in account that pays 4.5% interest compounded quarterly. What is the balance after 5 years?

$A = 1200\left(1 + \frac{.045}{4}\right)^{4 \cdot 5}$
$= 1500.90$

$1500.90 (4)

4. If a patient takes a 100 mg dose of medication and it is leaves the bloodstream at a rate of 14% per hour, how much remains in the blood after 8 hours?

$y = 100(1 - .14)^8$
$y = 100(.86)^8$
$\doteq 29.9$

29.9 mg (4)

5. From 1997 to 2001, the number n (in millions) of black and white TV's sold in the U.S. can be modeled by $n = 26.8(0.85)^t$ where t is the number of years since 1997.

a) What is the decay factor? 0.85 (1)

b) What is the percent decrease? 15 (1)

c) State the domain and range. D: $0 \le x \le 4$ R: $n > 0$ (1)

d) Estimate the number of black and white TV's sold in 1999. 19.4 million (1)

$n = 26.8(0.85)^2$

6. **Graph the function. State the domain and range.** (4)

$g(x) = 4e^{-3x} + 1$

x	y
0	5
1	1.2
2	1.01

asymptote

D: R
R: R > 1