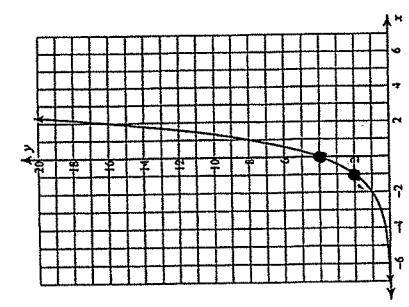
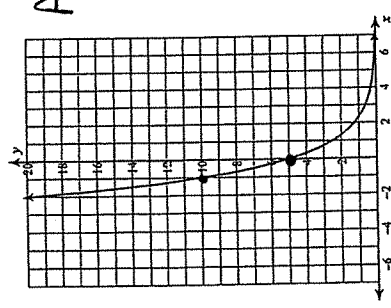


Write an equation for each graph.



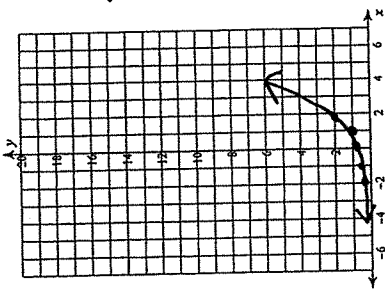
$A=4$
 $(-1, 2) > 2$
 $(0, 4)$
 $y = 4(2)^x$



$A=5$
 $-1 \ 10(.5)$
 $0 \ 5$
 $y = 5(.5)^x$

Sketch the graph of each function.

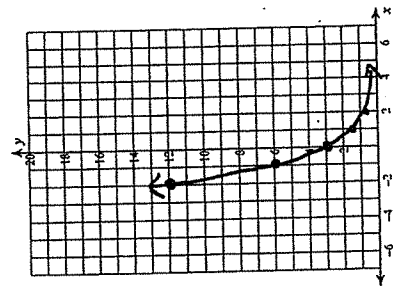
1) $y = \frac{1}{2} \cdot 2^x$



$A = \frac{1}{2}$
 $B = 2$

x	-2	-1	0	1	2
y	.125	.25	.5	1	2

3) $y = 3 \cdot \left(\frac{1}{2}\right)^x$



$A = 3$
 $B = \frac{1}{2}$

x	-2	-1	0	1	2
y	12	6	3	1.5	.75

What's the Exponent?

Unit Conversion for Exponent Practice

1.) A bank account value increases with an annual rate of 4%. What would the exponent in our equation be if we wanted to know how much money was in the account after:

12 Years: 12 365 Days: 1 8 Months: $\frac{8}{12} = \frac{2}{3} = .67$

2.) The number of cell phone subscribers increases by 75% every year after 1985. What would the exponent be if we wanted to know how many subscribers would there be in:

1988: 3 2000: 15 2150: 165

3.) If bacteria can double every hour, what would our exponent be if we wanted to know how much bacteria there would be after:

8 Hours: 8 2 Days: 48 1 Year: 8760

4.) If something decreases by 29% per hour, what would our exponent be if we wanted to know how much was left after:

4 Hours: 4 10 Mins: $\frac{10}{60} = \frac{1}{6} = .167$ 30 Sec: $\frac{1}{120} = .0083$

5.) A bank account value increases with a monthly rate of 2%. What would the exponent in our equation be if we wanted to know how much money was in the account after:

2 Years: 24 365 Days: 24 7 Months: 7

Convert the percentages to decimals.

5%	0.3%	35%	3%	2.5%
.05	.003	.35	.03	.025
65%	33.5%	.02%	9.53%	14.2%
.65	.335	.0002	.0953	.142

Convert the following

15 days to years $\frac{15}{365} = \frac{3}{73} = .041$	32 months to years $\frac{32}{12} = \frac{8}{3} = 2.67$	4 years to months $4 \cdot 12 = 48$	8 hours to days $\frac{8}{24} = \frac{1}{3} = .33$	3.3 days to hours $3.3 \times 24 = 79.2$
14 minutes to hours $\frac{14}{60} = \frac{7}{30} = 0.23$	4.6 hours to minutes $4.6 \times 60 = 276$	64 months to years $\frac{64}{12} = \frac{16}{3} = 5.33$	8 years to months $8 \cdot 12 = 96$	41 hours to days $\frac{41}{24} = 1.71$

$1+r$ $1-r$

Find the growth or decay rate for each percentage

Growth of 2% $1 + .02$ 1.02	Decay of 14.2% $1 - .142$ 0.858	Increasing by 9.2% $1 + .092$ 1.092	Decreasing by 0.03% $1 - .0003$ 0.9997
Appreciate by 4.3% $1 + .043$ 1.043	Depreciate by 3.43% $1 - .0343$ 0.9657	Grows by .08% $1 + .0008$ 1.0008	Decays by 4.3% 1 $1 - .043$ 0.957