

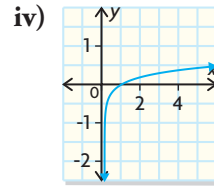
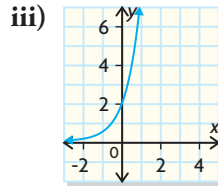
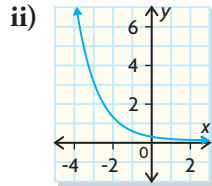
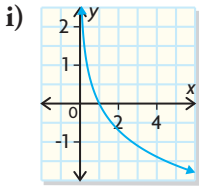
1. Match each function with the corresponding graph below. Provide your reasoning.

a)  $y = 0.2(0.4)^x$

c)  $y = 2(4)^x$

b)  $y = 0.5 \log x$

d)  $y = -2 \log x$



2. The table to the right shows the Canadian government's net debt, in billions of dollars.
- Create graphical and algebraic exponential models for the data.
  - What was the approximate net federal debt in 1988, to the nearest hundredth of a billion dollars?
  - Assuming the same growth rate, when did the net federal debt reach \$600 billion?
3. a) Predict the number of  $x$ -intercepts, the  $y$ -intercept, the end behaviour, the domain, and the range of the function

$$f(x) = 6\left(\frac{1}{4}\right)^x$$

Use the equation of the function to make your predictions.

Verify your predictions using graphing technology.

4. Use the characteristics below to describe the graph of this function:

$$y = -7 \ln x$$

- the location of any intercepts
  - the end behaviour
  - the domain and range
  - whether the function is increasing or decreasing
5. The table to the right shows the approximate energy, in kilojoules (kJ), that is released by earthquakes of different magnitudes. In 1960, the Valdivia earthquake in Chile released approximately  $1.1 \times 10^{16}$  kJ of energy.
- Determine the equation of the logarithmic regression function for the given data.
  - Use the equation of the logarithmic regression function to determine the magnitude of this earthquake to the nearest tenth.

Year	Net Federal Debt (\$ billions)
1955	17.56
1960	20.40
1965	26.84
1970	35.82
1975	55.13
1980	110.61
1985	250.52
1990	406.61
1995	550.69
2000	561.73

Statistics Canada

Energy Released (kJ)	Magnitude of Earthquake
63	0
2 000	1
63 000	2
2 000 000	3
63 000 000	4
2 000 000 000	5

**WHAT DO You Think Now?** Revisit **What Do You Think?** on page 435. How have your answers and explanations changed?