In 1996, there were 2573 computer viruses. During the next 7 years, the number of incidents increased by about 92% each year. What is the exponential growth model giving the number n of incidents t years after 1996.

In what year will there be more than 5,000 incidents?

$5000 = 2573(1+.92)^t$ in the year 1997

$\frac{5000}{2573} = 1.92^t$

$\log_{1.92}\left(\frac{5000}{2573}\right) = t$

$\frac{\log\left(\frac{5000}{2573}\right)}{\log 1.92} \approx 1.018$

An exponential function goes through the points (3, 64) and (2, 16) write a model for the function. $Y = ab^x$

$64 = ab^3$

$\frac{64}{b^3} = a$

$\frac{64}{4^3} = 1$

$16 = ab^2$

$16 = 64\left(\frac{b^2}{b^3}\right)$

$\frac{16}{64} = b^{-1}$

$b = \frac{64}{16} = 4$

$\boxed{Y = 1 \cdot 4^x}$

A power function goes through the points (3, 3) and (6, 12) write a model for the function.

$Y = ax^b$

$12 = a(6^b)$

$\frac{12}{6^b} = a$

$\frac{12}{6^2} = a$

$\frac{1}{3} = a$

$3 = aB^b$

$3 = 12\left(\frac{3^b}{6^b}\right)$

$\frac{3}{12} = \left(\frac{3}{6}\right)^b$

$\frac{1}{4} = \left(\frac{1}{2}\right)^b$

$\log_{.5}\frac{1}{4} = b$

$b = 2$

$\boxed{Y = \frac{1}{3}x^2}$