

9/13 Section 2.2

Write the equation of the exponential function that goes through (1,8) and (3,32). $y = A(b)^x$

$$\frac{8 = A(b)^1 \quad | \quad 32 = A(b)^3}{\hline}$$

① $8 = A(b)^1$

$$\frac{8}{b} = A$$

→ ② $32 = \frac{8}{b} (b^3) = \frac{8b^3}{b}$

③ $\frac{32}{8} = \frac{8b^2}{8}$

$$4 = b^2 \rightarrow b = \pm \sqrt{4} \text{ but } b > 0, b \neq 1 \text{ so}$$

← $\boxed{2 = b}$

④ If $b = 2$

then

$$A = \frac{8}{2} = 4$$

Equation: $\boxed{y = 4(2)^x}$