Math Worksheet: Graphs of Functions (5)

Given function *f* by

$$f(x) = \frac{2^{x+2} + 4}{4} + 1 = \frac{2^{x+2}}{2^2} + 2 = 2^x + 2$$

1. Find the domain and range of *f*.

Domain: $(-\infty, +\infty)$, Range: $(2, +\infty)$.
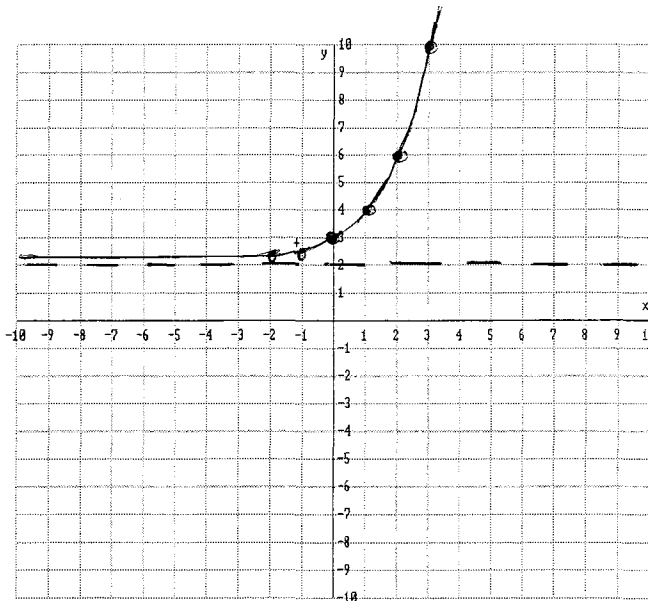
2. Find the horizontal asymptote of the graph of *f*.

$y = 2$.

3. Find the y and x intercepts, if any, of the graph of *f*.

y intercept : $(0, 3)$; No x-intercept.

4. Sketch the graph of *f* and label the intercepts and the asymptote

x	f(x)
-2	2.25
-1	2.5
0	3
1	4
2	6
3	10

← Horizontal asymptote $y = 2$.