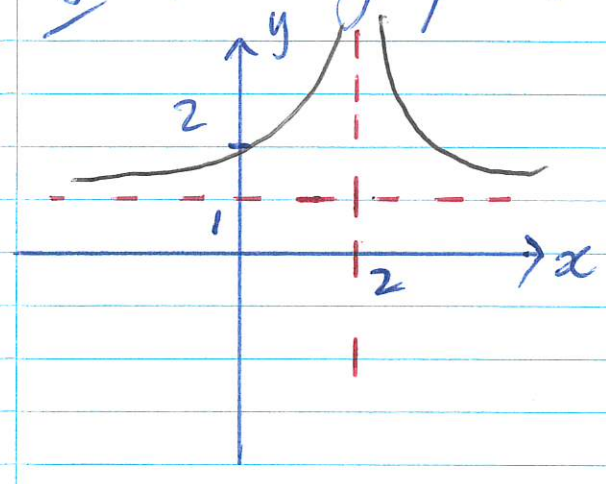
DETERMINING RULES.

Eg For the graph shown find the rule.



Truncus.
$\Rightarrow$ form $y = \frac{a}{(x-h)^2} + k$.

asymptotes $x = 2 \rightarrow h = 2$
$y = 1 \rightarrow k = 1$

$$y = \frac{a}{(x-2)^2} + 1$$

$(0, 2)$.

$$2 = \frac{a}{(0-2)^2} + 1$$

$$1 = \frac{a}{(-2)^2}$$

$$1 = \frac{a}{4}$$

$$4 = a.$$

$$y = \frac{4}{(x-2)^2} + 1.$$

Eg The points $(2, 1)$ and $(10, 6)$ lie on the curve with equation $y = a\sqrt{x-1} + b$. Find the equation

$(2, 1)$

$$1 = a\sqrt{2-1} + b.$$

$$1 = a\sqrt{1} + b.$$

$$1 = a + b. \quad (1)$$

$(10, 6)$.

$$6 = a\sqrt{10-1} + b$$

$$6 = a\sqrt{9} + b$$

$$6 = 3a + b. \quad (2)$$

Solve 1+2 Simultaneously

$a = \frac{5}{2}$ $\quad b = -\frac{3}{2}$.

$$y = \frac{5}{2}\sqrt{x-1} - \frac{3}{2}.$$

Ex 3H Q^{ns} on Work Plan.