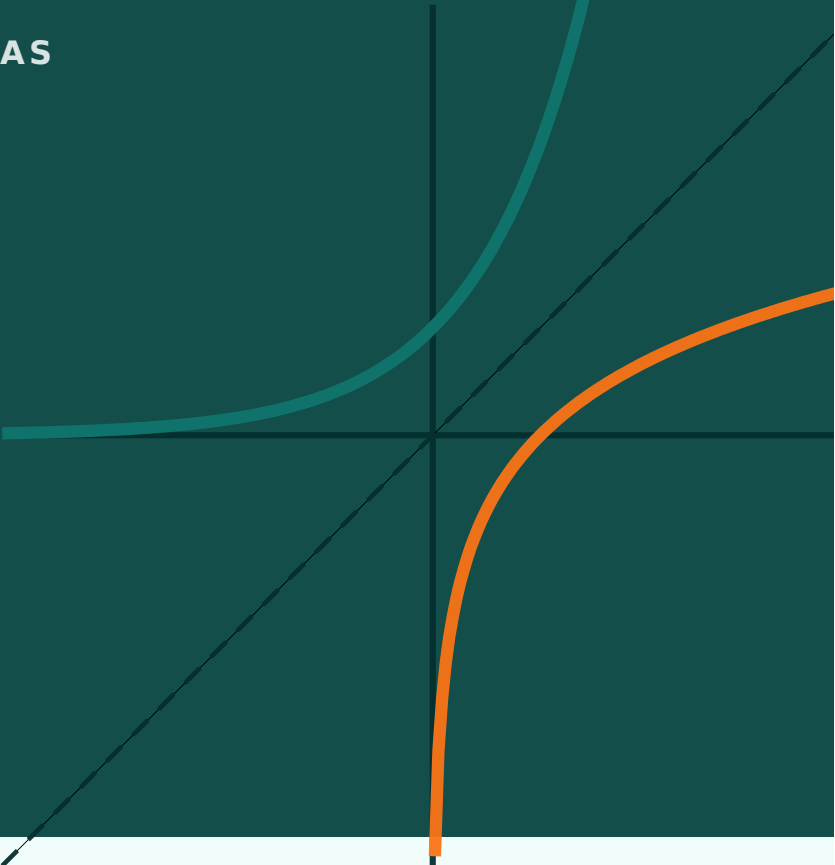


Functions



Gradient; forms of a line **B**

$$m = \frac{y_2 - y_1}{x_2 - x_1}, \quad y = mx + c, \quad ax + by + d = 0, \\ y - y_1 = m(x - x_1)$$

Parallel; perpendicular

$$m_1 = m_2; \quad m_1 m_2 = -1$$

Quadratic: axis of symmetry **B**

$$x = -\frac{b}{2a}$$

Linear; quadratic models

$$f(x) = mx + c; \quad f(x) = ax^2 + bx + c$$

Exponential models

$$f(x) = ka^x + c, \quad f(x) = ka^{-x} + c, \quad f(x) = ke^{rx} + c$$

Direct / inverse variation

$$f(x) = ax^n, \quad n \in \mathbb{Z}$$

Cubic model

$$f(x) = ax^3 + bx^2 + cx + d$$

Sinusoidal model (degrees)

$$f(x) = a \sin(bx) + d: \quad \text{amplitude } |a|, \quad \text{period } \frac{360^\circ}{b}$$

B given in the exam. Learn the rest.