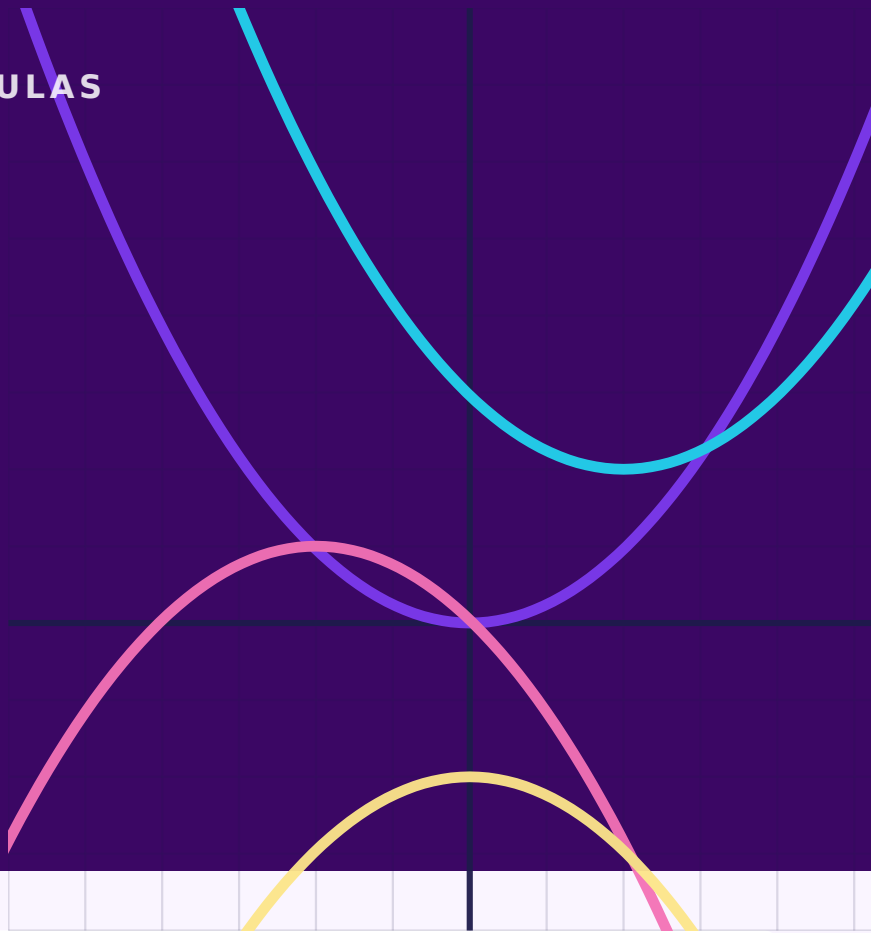


Functions



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 lines

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

Quadratic: axis of symmetry **B**

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

Quadratic formula; discriminant **B**

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}, \quad \Delta = b^2 - 4ac$$

Vertex form, vertex (h, k) ; intercept form

$$y = a(x - h)^2 + k; \quad y = a(x - p)(x - q)$$

Composite; inverse

$$(f \circ g)(x) = f(g(x)); \quad f(f^{-1}(x)) = x$$

$y = \frac{ax+b}{cx+d}$ **asymptotes**

$$x = -\frac{d}{c}, \quad y = \frac{a}{c}$$

Exponential $\leftrightarrow$ log

$$y = a^x \iff x = \log_a y; \quad e^x \text{ and } \ln x \text{ are inverses}$$

B given in the exam. Learn the rest.