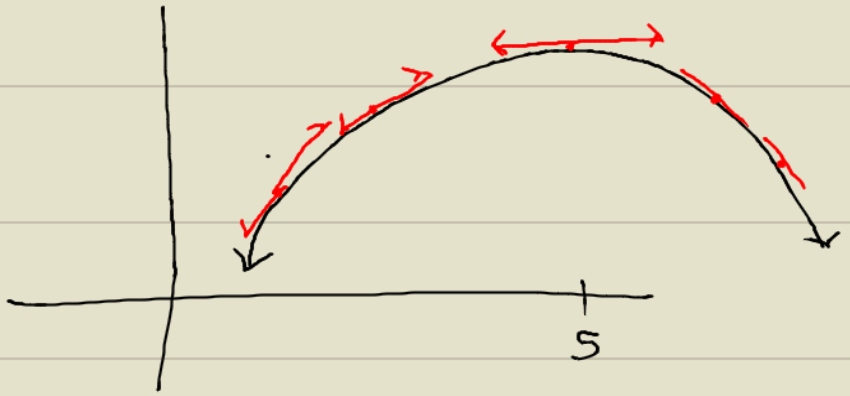

1. $y = x^3 - 48x$

FIND CRITICAL NUMBERS FOR INCREASING / DECREASING

① FIND DERIVATIVE

$y' = 3x^2 - 48$

② SET EQUAL TO ZERO AND SOLVE

$3x^2 - 48 = 0$

$3x^2 = 48$

$\frac{3x^2}{3} = \frac{48}{3}$

$x^2 = 16$

$x = \pm\sqrt{16}$

$x = \pm\sqrt{4 \cdot 4}$

$x = \pm 4$

$x = -4 \quad x = 4$

2. $y = x^3 - 2x^2 + x + 11$

① $y' = 3x^2 - 4x + 1$

② $3x^2 - 4x + 1 = 0$

KEY #

$(3x - 1)(x - 1) = 0$

$3x - 1 = 0 \quad x - 1 = 0$

$3x = 1$

$\frac{3x}{3} = \frac{1}{3}$

$x = \frac{1}{3}$

$x = 1$