

$$\text{gradient} = m = \frac{\text{rise}}{\text{run}} = \frac{y_2 - y_1}{x_2 - x_1}$$

$$y - y_1 = m(x - x_1)$$

Equation of a straight line

$$y = mx + c$$

- c = constant, it is also the y-intercept
- m = gradient

Simultaneous equations

By substitution

1. Substitute one equation into the other to create one new equation with one variable
2. Solve the equation.
3. Substitute this back into one of the original equations to find the value of the other variable.

By elimination

1. Subtract one equation from the other so that there is only one variable left.
2. Solve the equation.
3. Substitute this value back into one of the original equations to find the value of the other variable.

cost = revenue

Step graphs

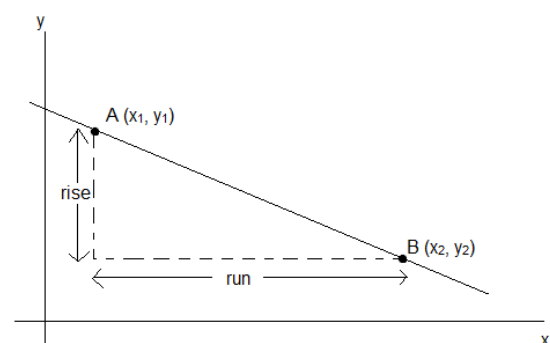
- open circle = not included
- closed circle = included

Segment graphs

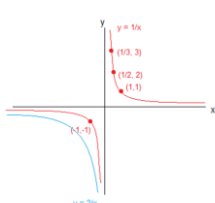
- different gradients for different equations and domains
- remember to check the y-intercept as sometimes it is not shown on the graph
- open circle = not included
- closed circle = included

Objective functions

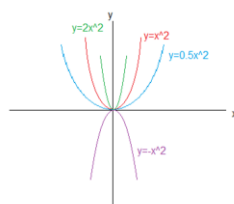
- remember to check the objective function and what it is asking. Does it want more of something or less?
- substitute the extreme points in order to find the appropriate values to best satisfy the objective function



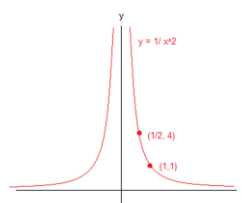
n = -1, y = k/x



n = 2, y = kx^2



n = -2, y = k/x^2



n = 3, y = kx^3

