

PENANG SANGAM HIGH SCHOOL
DEPARTMENT OF MATHEMATICS/PHYSICS
YEAR 11 MATHEMATICS - WEEK 19

STRAND 4

GRAPHS

Sub – Strand 4.1

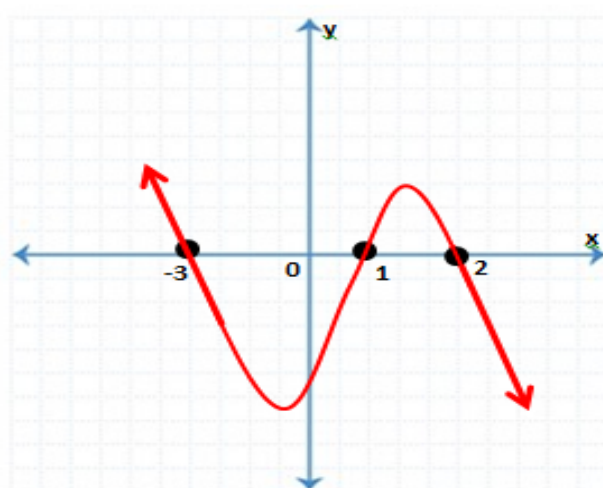
GRAPHS

Learning Objective

At the end of this lesson, students should be able to:

- Write the equation of the given graph

Example 1: Find the equation of the graph given below.



Shape

ve



The x-intercepts are given as $x = -3$, $x = 1$ & $x = 2$

Take it on the left side with the x

$$x = -3$$

$$x + 3 = -3 + 3$$

$$x = 1$$

$$x - 1 = 1 - 1$$

$$x = 2$$

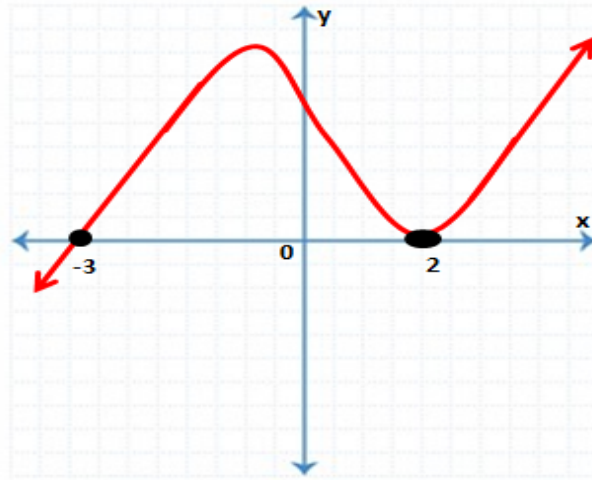
$$x - 2 = 2 - 2$$

While solving for x-intercepts, we let $y = 0$ to solve for x. then each factor is equated to zero.

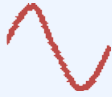
Therefore, the factors of the equation are $(x + 3)(x - 1)(x - 2)$

Thus, $y = (x + 3)(x - 1)(x - 2)$

Example 2: Find the equation of the cubic function given below.



Shape +ve



The x-intercepts are given as $x = -3$ & $x = 2$

Take it on the left side with the x

$$x = -3$$

$$x + 3 = -3 + 3$$

$$x = 2$$

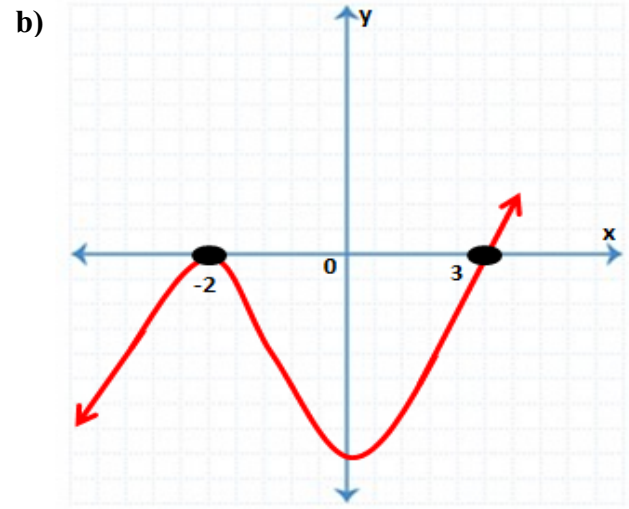
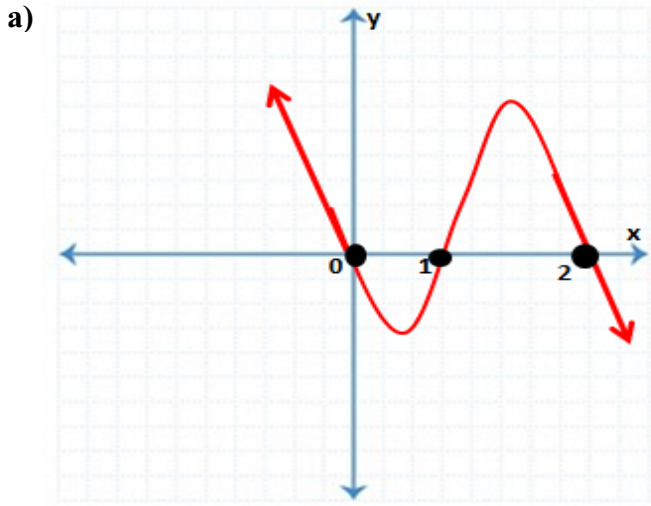
$$x - 2 = 2 - 2$$

While solving for x-intercepts, we let $y = 0$ to solve for x. then each factor is equated to zero.
Therefore, the factors of the equation are $(x + 3)(x - 2)$

Turning point at $x = 2$ indicates the factor $(x - 2)$ will have even power

$$\text{Thus, } y = (x + 3)(x - 2)^2$$

Exercise: Write the equations of the following graphs



THE END