

WORKSHEET

POLYNOMIAL VALUE

Group : _____

Member: _____

Learning Objectives:

- Students can understand the value of polynomials using the substitution method.
- Students can understand the value of polynomials using the horner method.

Example

An object moves according to the function $y(t) = 5t^2 - 4t + 8$ with y in meters and t in seconds. How many meters does the object move in 2 seconds?

Answer:

Substitution

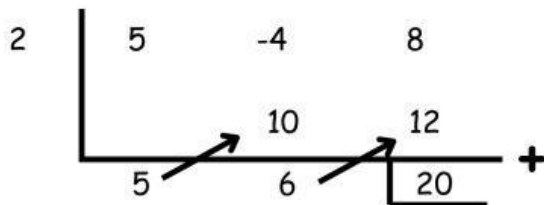
$$y(2) = 5(2)^2 - 4(2) + 8$$

$$y(2) = 5 \times 4 - 4 \times 2 + 8$$

$$y(2) = 20 - 8 + 8$$

$$y(2) = 20$$

Horner



So, the object has moved 20 meters in 2 seconds.



Assignment

Read the following text carefully and answer correctly!

- 1 A packaging company models the volume of a carton based on its height x in centimeters:

$$3x^3 - 85x^2 + 600x$$

What is the volume of the box if the height is 5 cm?

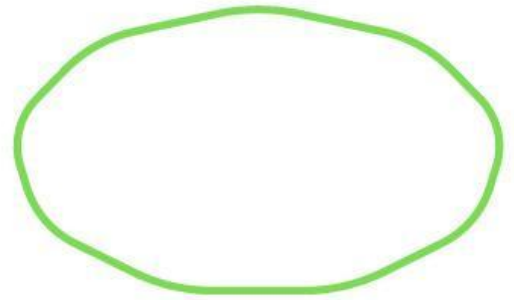
Answer:

Substitution



Horner

_____ +



2

A student walks from home to school. The distance the student walks after t minutes is modeled by $d(t) = 3t^2 + 2t + 1$

If the student walks for 4 minutes, how far has the student walked?

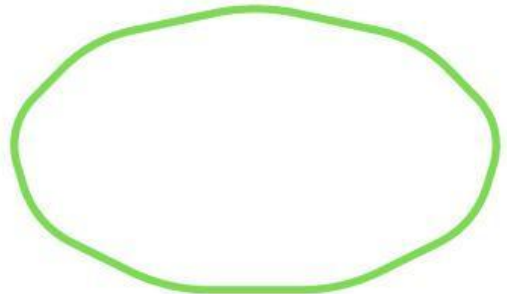
Answer:



Substitution

Horner

_____ +



3

A family checks their electricity use every week. The electricity use in week t (in kilowatt-hours) is modeled by

$$E(t) = t^4 - 6t^3 + 11t^2 - 6t + 20$$

How much electricity did they use in week 2?

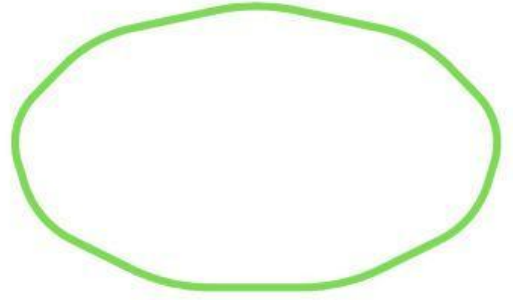
Answer:



Substitution

Horner

_____ +



4

A Gojek driver tracks the distance he travels in the first few minutes. The distance after t minutes is modeled by

$$d(t) = 0.1t^2 + 0.3t$$

How far does he travel in 5 minutes?

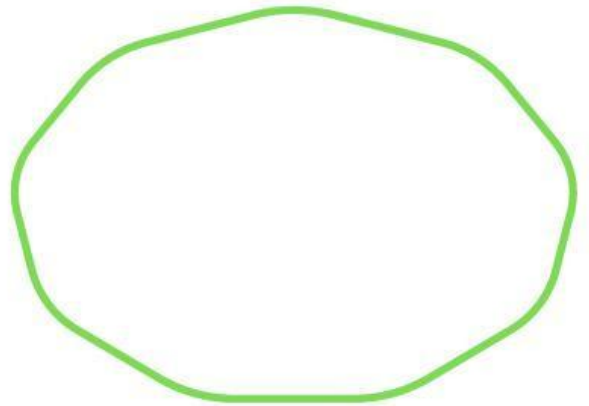
Answer:



Substitution

Horner

_____ +



Reflection

If you are given any polynomial, how would you decide whether to use substitution or Horner's method? **Explain** your thinking!
