***Solution Section* 2.5 – Polynomial Functions**

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 3*rd* degree (*n* is ***odd***)

  falls left

  rises right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 3*rd* degree (*n* is ***odd***)

  falls left

 rises right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 3*rd* degree (*n* is ***odd***)

  rises left

  falls right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 3*rd* degree (*n* is ***odd***)

  falls left

  rises right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 4*rd* degree (*n* is ***even***)

  rises left

  rises right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 4*rd* degree (*n* is ***even***)

  rises left

  rises right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 4*rd* degree (*n* is ***even***)

  falls left

  falls right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 4*rd* degree (*n* is ***even***)

  falls left

  falls right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 5*th* degree (*n* is ***odd***)

  falls left

  rises right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 5*th* degree (*n* is ***odd***)

  rises left

  falls right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 6*th* degree (*n* is ***even***)

  falls left

  falls right

***Exercise***

Determine the end behavior of the graph of the polynomial function 

***Solution***

Leading term:  with 6*th* degree (*n* is ***even***)

  rises left

  rises right

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 1 and 2.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 0 and 1.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between −1 and 0.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 2 and 3.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between −2 and −3.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 1 and 2.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between −3 and −2.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 2 and 3.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have same signs.

Therefore, ***cannot be determined***.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have same signs.

Therefore, ***cannot be determined***.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 3 and 4.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***







Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 0 and 1.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between −3 and −2.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 1 and 2.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***













Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 1 and.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***











Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 3 and.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 1 and 2.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***









Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 2 and 3.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***







Since  have same sign.

Therefore, ***cannot be determined***.

***Exercise***

Use the Intermediate Value Theorem to show that each polynomial has a real zero between the given integers. 

***Solution***



















Since  have opposite signs.

Therefore, the polynomial ***has a real zero*** between 2.1 and 2.2.