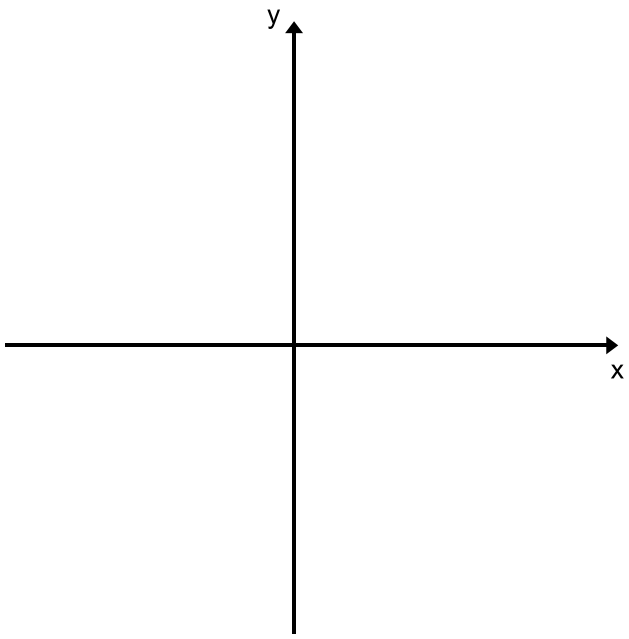
Name_____Polynomial PROJECT ALPHA Hour_____

$$f(x) = -2x^4 + 4x^3 + 38x^2 - 40x$$

Use technology to tell your AP Precalculus Teacher as much about this function as possible.



- State a viewing window that will allow you to see all important features of this function.

  x min _____ x max _____

  y min _____ y max _____

- State the range using bracket notation.

- State
- Why is stating the domain for this function trivial?

Since you are dealing with a quartic polynomial and they are very difficult to deal with for many reasons, your mathematics teacher felt that giving you two of the roots of this polynomial would be helpful in allowing to do some restructiing of the factorable quartic polynomial .

- Given that x = 1 is a root of this quartic polynomial, use synthetic division to factor this quartic polynomial

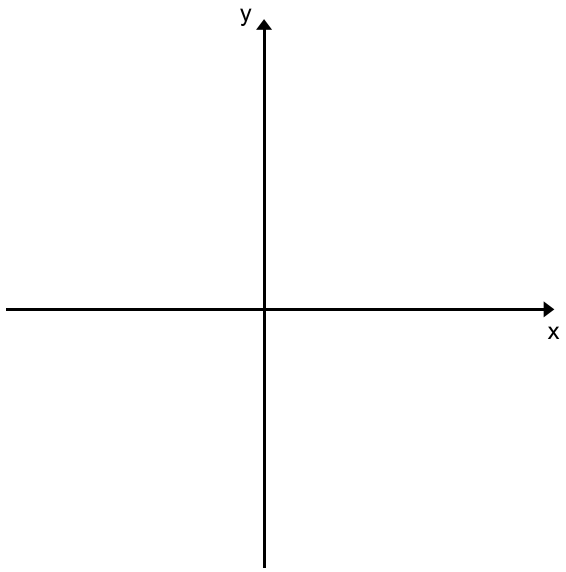
- Given that x = -4 is a root of this quartic polynomial, use synthetic division to factor this quartic polynomial

- Given that both x = 1 and x = -4 are roots of this quartic polynomial, use synthetic division to factor this quartic polynomial COMPLETELY

- State the local extremes of this polynomial as coordinates _____

$$f(x) = -2x^4 + 4x^3 + 38x^2 - 40x$$

Sketch on this graph ONLY the positive portion of f(x) labeling the important points within that domain x values that generate positive f(x) values.

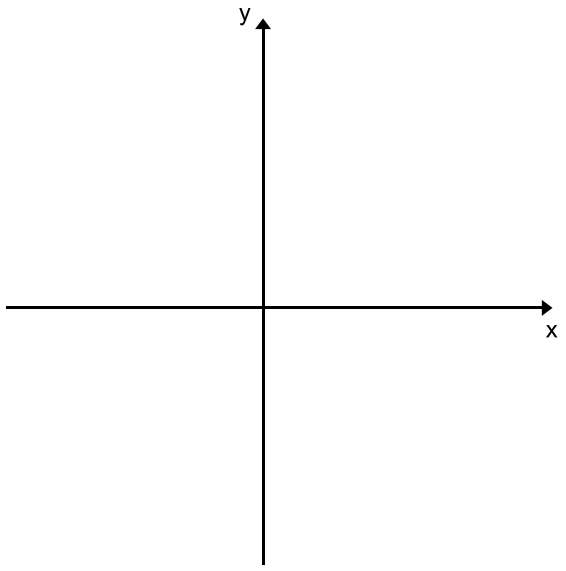


- BE careful and use set notation to state the x values that guarantee that for function values are positive.

Note: [,] , (,] (,) and [,) are brackets that can be used to describe the behavior of f(x) in terms of x

- Repeat the above task using inequalities and compound inequalities

Sketch on this graph ONLY the decreasing values of f(x) labeling the important points within that domain x values that generate decreasing f(x) values.



- BE careful and use set notation to state the x values that guarantee that for function values are decreasing.

Note: [,] , (,] (,) and [,) are brackets that can be used to describe the behavior of f(x) in terms of x

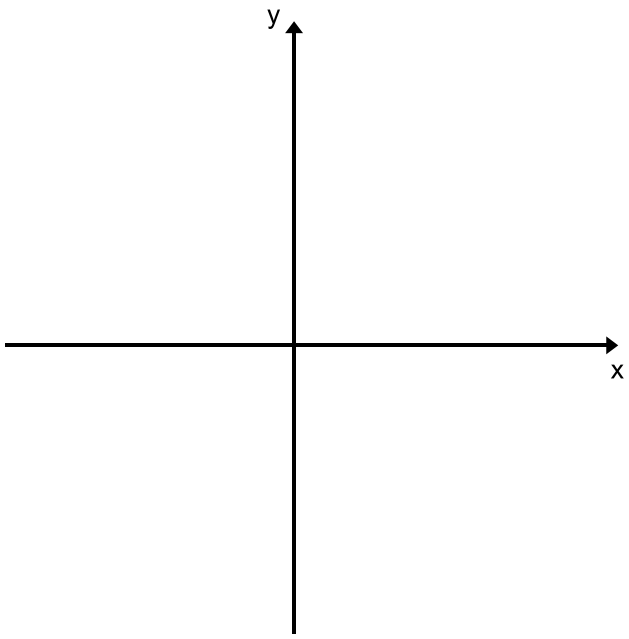
- Repeat the above task using inequalities and compound inequalities

You will also be producing a DIGITAL COMPONENT FOR THIS ON DESMOS!

Name_____Polynomial PROJECT BETA Hour_____

$$f(x) = -3x^4 - 18x^3 - 9x^2 + 30x$$

Use technology to tell your AP Precalculus Teacher as much about this function as possible.



- State a viewing window that will allow you to see all important features of this function.

  x min _____ x max _____

  y min _____ y max _____

- State the range using bracket notation.

- Why is stating the domain for this function trivial?

Since you are dealing with a quartic polynomial and they are very difficult to deal with for many reasons, your mathematics teacher felt that giving you two of the roots of this polynomial would be helpful in allowing to do some restructiing of the factorable quartic polynomial .

- Given that x = 1 is a root of this quartic polynomial, use synthetic division to factor this quartic polynomial

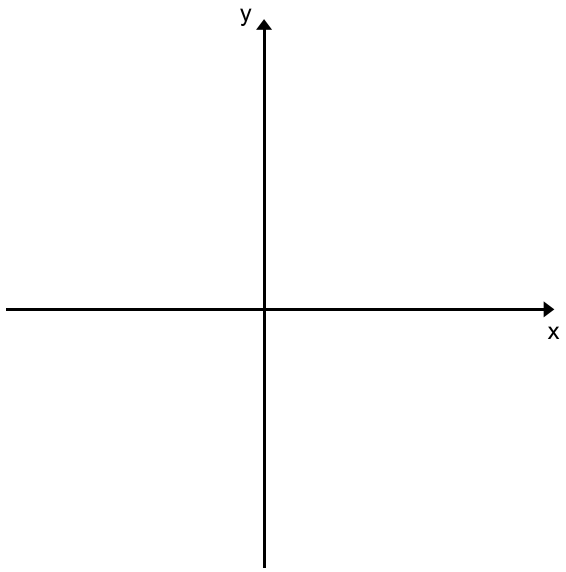
- Given that x = -5 is a root of this quartic polynomial, use synthetic division to factor this quartic polynomial

- Given that both x = 1 and x = -5 are roots of this quartic polynomial, use synthetic division to factor this quartic polynomial COMPLETELY

- State the local extremes of this polynomial as coordinates _____

$$f(x) = -3x^4 - 18x^3 - 9x^2 + 30x$$

Sketch on this graph ONLY the positive portion of f(x) labeling the important points within that domain x values that generate positive f(x) values.

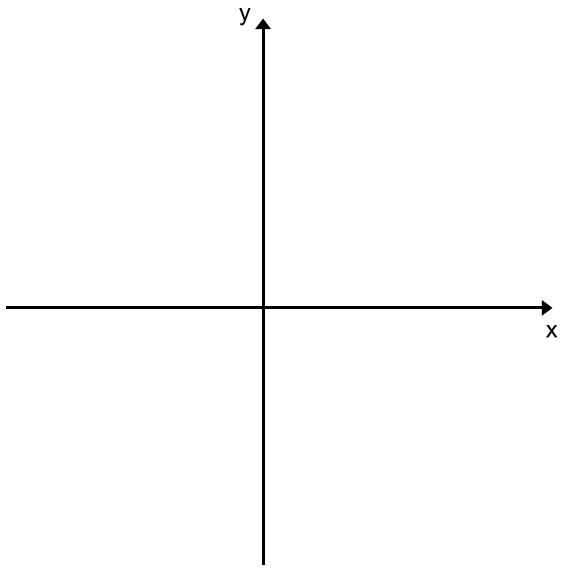


- BE careful and use set notation to state the x values that guarantee that for function values are positive.

Note: [,] , (,] (,) and [,) are brackets that can be used to describe the behavior of f(x) in terms of x

- Repeat the above task using inequalities and compound inequalities

Sketch on this graph ONLY the decreasing values of f(x) labeling the important points within that domain x values that generate decreasing f(x) values.



- BE careful and use set notation to state the x values that guarantee that for function values are decreasing.

Note: [,] , (,] (,) and [,) are brackets that can be used to describe the behavior of f(x) in terms of x

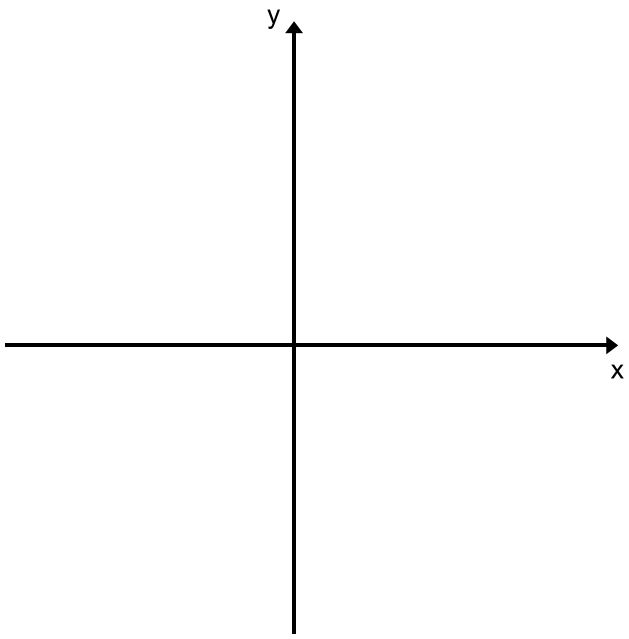
- Repeat the above task using inequalities and compound inequalities

You will also be producing a DIGITAL COMPONENT FOR THIS ON DESMOS!

Name_____Polynomial PROJECT DELTA Hour_____

$$f(x) = 5x^4 + 40x^3 + 5x^2 - 210x$$

Use technology to tell your AP Precalculus Teacher as much about this function as possible.



- State a viewing window that will allow you to see all important features of this function.

  x min _____ x max _____

  y min _____ y max _____

- State the range using bracket notation.

- Why is stating the domain for this function trivial?

Since you are dealing with a quartic polynomial and they are very difficult to deal with for many reasons, your mathematics teacher felt that giving you two of the roots of this polynomial would be helpful in allowing to do some restructiing of the factorable quartic polynomial .

- Given that x = -3 is a root of this quartic polynomial, use synthetic division to factor this quartic polynomial

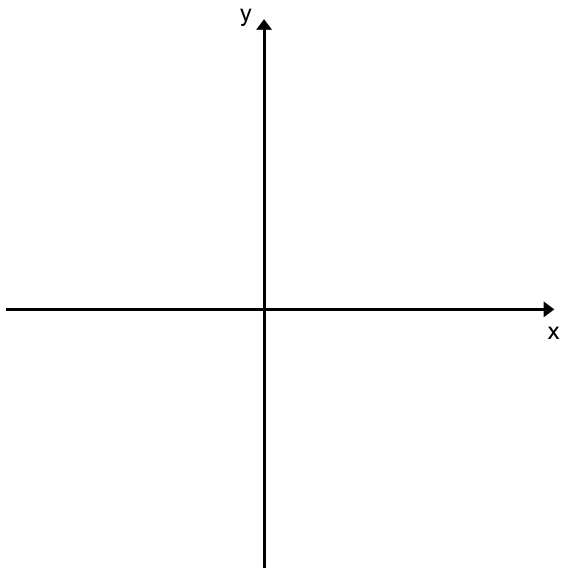
- Given that x = 2 is a root of this quartic polynomial, use synthetic division to factor this quartic polynomial

- Given that both x = -3 and x = 2 are roots of this quartic polynomial, use synthetic division to factor this quartic polynomial COMPLETELY

- State the local extremes of this polynomial as coordinates _____

$$f(x) = 5x^4 + 40x^3 + 5x^2 - 210x$$

Sketch on this graph ONLY the positive portion of f(x) labeling the important points within that domain x values that generate positive f(x) values.

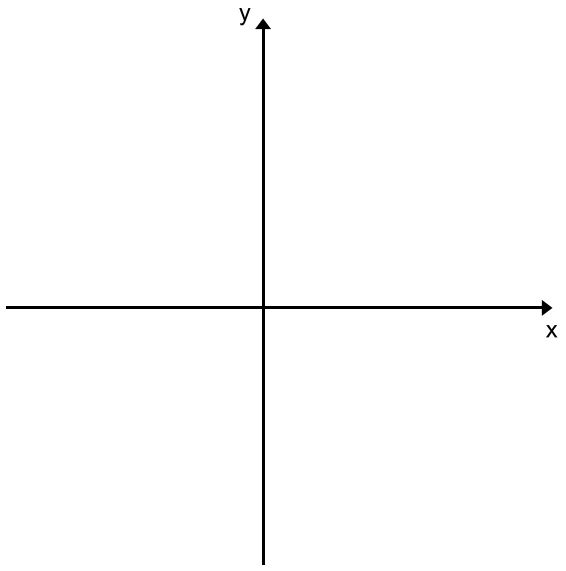


- BE careful and use set notation to state the x values that guarantee that for function values are positive.

Note: [,] , (,] (,) and [,) are brackets that can be used to describe the behavior of f(x) in terms of x

- Repeat the above task using inequalities and compound inequalities

Sketch on this graph ONLY the decreasing values of f(x) labeling the important points within that domain x values that generate decreasing f(x) values.



- BE careful and use set notation to state the x values that guarantee that for function values are decreasing.

Note: [,] , (,] (,) and [,) are brackets that can be used to describe the behavior of f(x) in terms of x

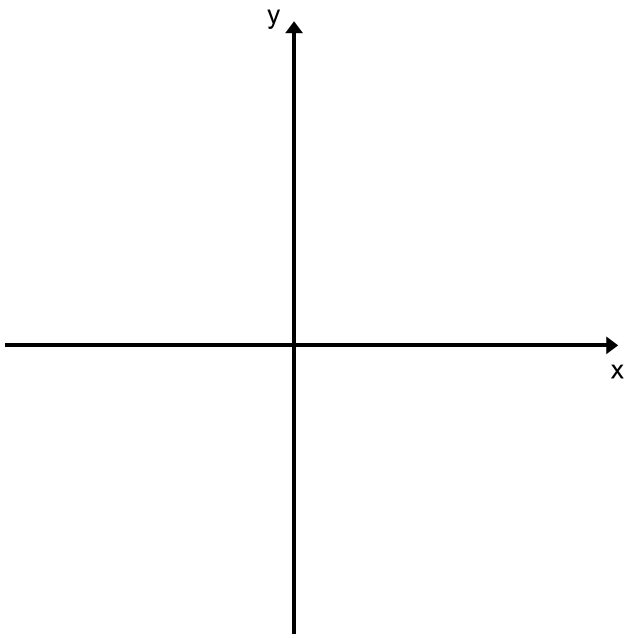
- Repeat the above task using inequalities and compound inequalities

You will also be producing a DIGITAL COMPONENT FOR THIS ON DESMOS!

Name_____Polynomial PROJECT GAMMA Hour_____

$$f(x) = 6x^4 - 18x^3 - 78x^2 + 90x$$

Use technology to tell your AP Precalculus Teacher as much about this function as possible.



- State a viewing window that will allow you to see all important features of this function.

  x min _____ x max _____

  y min _____ y max _____

- State the range using bracket notation.

- Why is stating the domain for this function trivial?

Since you are dealing with a quartic polynomial and they are very difficult to deal with for many reasons, your mathematics teacher felt that giving you two of the roots of this polynomial would be helpful in allowing to do some restructiing of the factorable quartic polynomial .

- Given that x = 1 is a root of this quartic polynomial, use synthetic division to factor this quartic polynomial

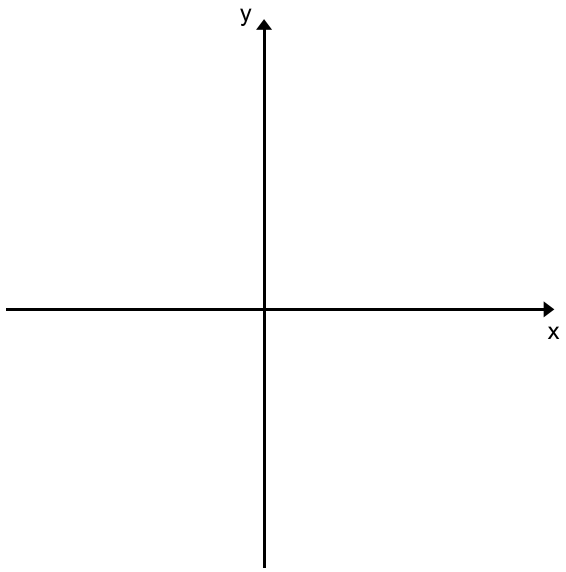
- Given that x = -3 is a root of this quartic polynomial, use synthetic division to factor this quartic polynomial

- Given that both x = 1 and x = -3 are roots of this quartic polynomial, use synthetic division to factor this quartic polynomial COMPLETELY

- State the local extremes of this polynomial as coordinates _____

$$f(x) = 6x^4 - 18x^3 - 78x^2 + 90x$$

Sketch on this graph ONLY the positive portion of f(x) labeling the important points within that domain x values that generate positive f(x) values.

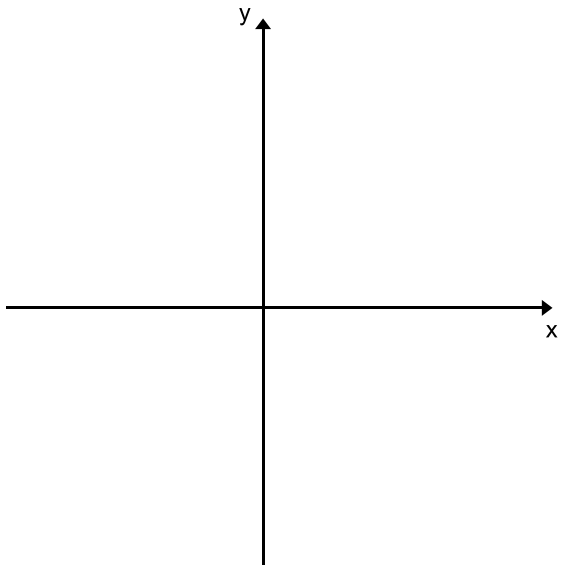


- BE careful and use set notation to state the x values that guarantee that for function values are positive.

Note: [,] , (,] (,) and [,) are brackets that can be used to describe the behavior of f(x) in terms of x

- Repeat the above task using inequalities and compound inequalities

Sketch on this graph ONLY the decreasing values of f(x) labeling the important points within that domain x values that generate decreasing f(x) values.



- BE careful and use set notation to state the x values that guarantee that for function values are decreasing.

Note: [,] , (,] (,) and [,) are brackets that can be used to describe the behavior of f(x) in terms of x

- Repeat the above task using inequalities and compound inequalities

You will also be producing a DIGITAL COMPONENT FOR THIS ON DESMOS!