

Bellwork Alg 2 Wednesday, November 6, 2019

Use what you know about end behavior, possible number of x-intercepts, and number of extrema for polynomials to find a good window that shows all extrema, x-intercepts, and intervals of increasing and decreasing for this polynomial:

$$y = x^5 + 17x^4 - 521x^3 - 1617x^2 + 33480x$$

State the window used and sketch this polynomial.

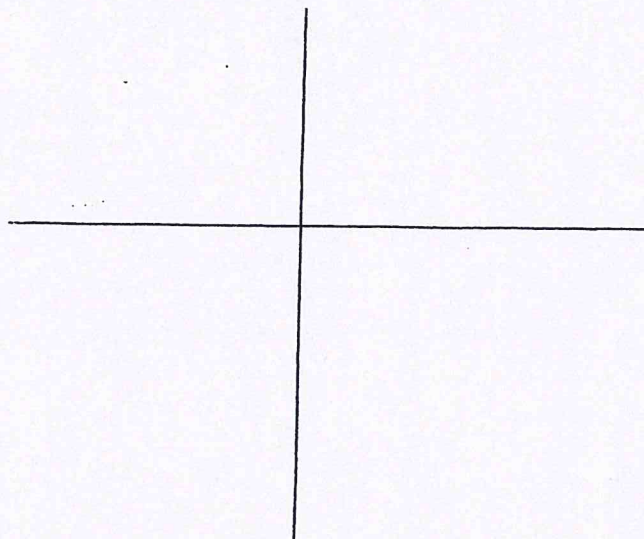
Sketch

$$X_{\min} =$$

$$X_{\max} =$$

$$Y_{\min} =$$

$$Y_{\max} =$$



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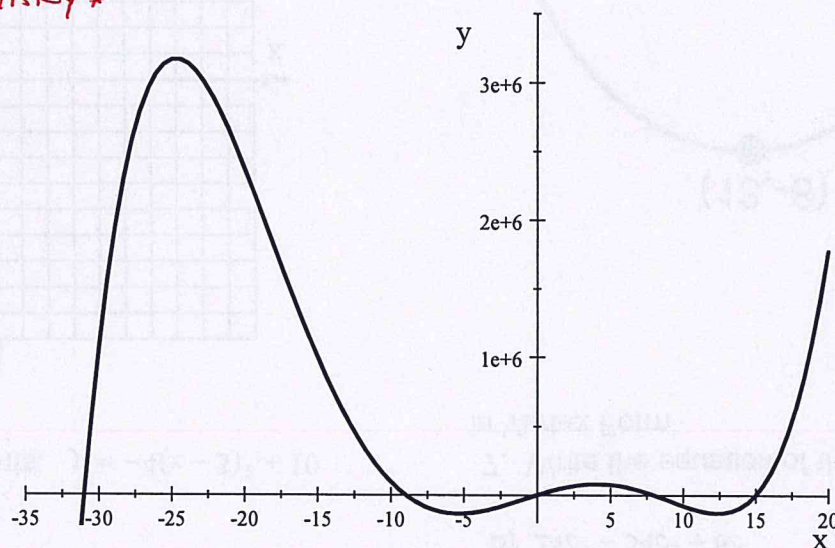
$$X_{\min} = -35$$

$$X_{\max} = 20$$

$$Y_{\min} = -200,000$$

$$Y_{\max} = 3,500,000$$

WINDOW CAN VARY



• THIS IS A POSITIVE ODD POLYNOMIAL SO ITS
END BEHAVIOR SHOULD BE $\downarrow \uparrow$

• THIS A 5TH DEGREE POLYNOMIAL SO IT
SHOULD HAVE:

• up to $5-1 = 4$ extremes

• up to 5 x-intercepts (REAL ZEROS)

THIS GRAPH SHOWS THE PROPER END BEHAVIOR,
HAS THE MAX # OF EXTREMES, & MAX # OF
X-INTERCEPTS, THEREFORE, THIS WINDOW
IS A "GOOD" ONE.