September 8, 2025 11:47 PM

Hi

1.2

In conclusion:

Key Features of Graphs of Polynomial Function of Odd Degree	
Positive Leading Coefficient End Behaviour	Negative Leading Coefficient End Behaviour
$x \to \infty,\ y \to \infty$ $x \to -\infty,\ y \to -\infty$ Extends from Q_3 to Q_1	$x \to \infty,\ y \to -\infty$ $x \to -\infty,\ y \to \infty$ Extends from Q_2 to Q_4
Number of Absolute Maxima/Minima Points	Number of x-intercepts
None	1 to n; where "n" is the degree of the polynomial
Key Features of Graphs of Polynomial Function of Even Degree	
Positive Leading Coefficient End Behaviour	Negative Leading Coefficient End Behaviour
$x \to \infty,\ y \to \infty$ $x \to -\infty,\ y \to \infty$ Extends from Q_2 to Q_1	$x \to \infty,\ y \to -\infty$ $x \to -\infty,\ y \to -\infty$ Extends from Q_3 to Q_4
Number of Absolute Maxima/Minima Points	Number of x-intercepts
One • Global min if L.C. is +ve • Global max if L.C. is −ve	0 to n; where n is the degree
All Polynomials	
• A degree polynomial has at most $n-1$ turning points	

Notes

→ At least 1 x int, up to a max of the degree.

Note:
- Odd degree polynomials do not have global max or min
  - ↳ Max # of Turning points is 1 less than the degree of the polynomial (Even and odd)

However

1.2 Day 1 Practice Questions

$x \to \infty,\ y \to \infty$
$x \to -\infty, y \to \infty$

No x int
required
for even degree functions.

↳ Even degree
Polynomials:
- if L.C is (+),
there is a global min

- if L.C is (-),
there is a global max

All Polynomials
• A degree n polynomial has at most _____ turning points

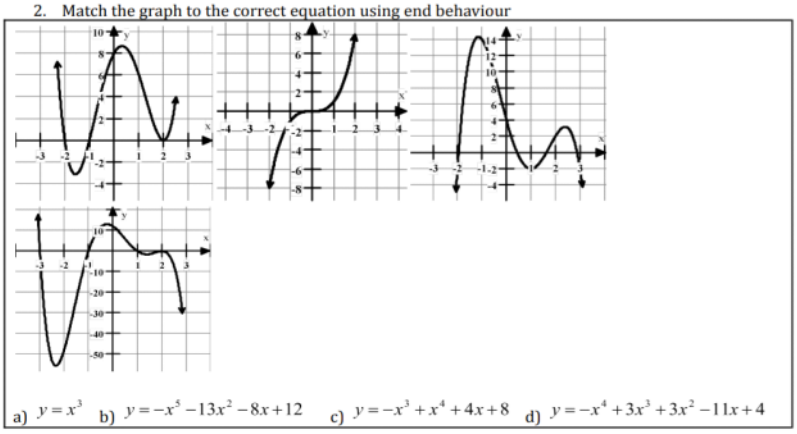
Practice: 1.2 Day 1 Practice Questions

1.2 Day 1 Practice Questions

1. What is the end behaviour of the following functions? Fill in the chart below:

Polynomial Function	End Behaviour	Polynomial Function	End Behaviour
a) $f(x)=7x^8-18x^3+-14$		b) $f(x)=8x^3+17x^3-9x+1$	
c) $f(x)=-18x^5+x^3+x+2$		d) $f(x)=-x^6+1$	

2. Match the graph to the correct equation using end behaviour



a) $y=x^3$ b) $y=-x^5-13x^2-8x+12$ c) $y=-x^3+x^4+4x+8$ d) $y=-x^4+3x^3+3x^2-11x+4$

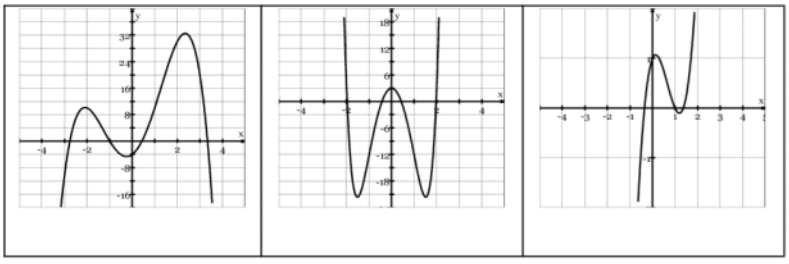
3. State the domain and range be for functions with the following characteristics:

a) A function with degree 8 and a negative leading coefficient

b) A function with degree 3 and a positive leading coefficient

4. Match each polynomial to the graphs. Justify your match.

$f(x)=2x^3-4x^2+x+1$; $g(x)=-x^4+10x^2+5x-4$; $h(x)=-2x^5+5x^3-x$; $p(x)=x^6-16x^2+3$



5. On a separate piece of paper, sketch a polynomial function that satisfies each description
a) A quintic function with a negative leading coefficient and five x-intercepts
b) A cubic function with positive leading coefficient and two x-intercepts
c) A quartic function with a negative leading coefficient and no x-intercepts

6. Using desmos, graph the following functions.
Are the graphs consistent with your finding from the investigation?
- *Consider: x-int, end behaviour, turning points, etc.*