Graphs!!

degree

regression

end behavior

shape

intersect

maximums

minimums

No Calculator Problem!!!!

2

The graph of $g(x) = x^3 - 9x^2 + 3x - 1$ is translated up 5 units to produce the graph of the function $h(x)$. Which of the following could be $h(x)$?

(A) $h(x) = x^3 - 9x^2 + 3x - 5$

(B) $h(x) = x^3 - 9x^2 + 3x - 4$

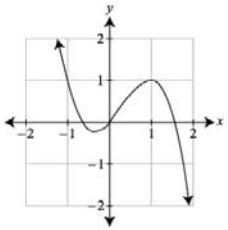
(C) $h(x) = x^3 - 9x^2 + 3x + 4$

(D) $h(x) = x^3 - 9x^2 + 3x + 5$

No Calculator Problem!!!!

1

The graph of a function is shown.



Which could be the equation of the graph?

(A) $f(x) = x^2 - x$

(B) $f(x) = -x^2 + x$

(C) $f(x) = x^3 - x^2 + x$

(D) $f(x) = -x^3 + x^2 + x$

No Calculator Problem!!!!

3

Consider the functions $f(x)$, $g(x)$, and $h(x)$.

$f(x) = x^3 - 9x^2 + 6x + 5$

$g(x) = -x^2 + x + 5$

$h(x) = -2x^3 + 5x^2 + 2x - 1$

Click the boxes within the table that describe the end behavior of each function as $x \to \infty$.

	$f(x)$	$g(x)$	$h(x)$
increasing	☐	☐	☐
decreasing	☐	☐	☐

No Calculator Problem!!!!

4

The function $h(x)$ is a polynomial of degree 3. As the value of x increases, the value of $h(x)$ decreases. As the value of x decreases, the value of $h(x)$ increases. Which polynomial function exhibits the **same** end behavior as $h(x)$?

(A) $g(x) = 8x^5 - 35x^2 + 20$

(B) $g(x) = 3x^4 - 21x^3 + 12x$

(C) $g(x) = -8x^5 + 15x^2 - 50$

(D) $g(x) = -3x^4 + 18x^3 - 14x$

5

What value(s) of x satisfies the system $\begin{cases} y = x^2 - 6x + 9 \\ y = 2x - 6 \end{cases}$?

(A) $x = -5$

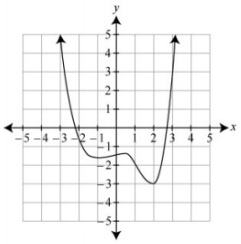
(B) $x = -3$

(C) $x = 0, x = 4$

(D) $x = 3, x = 5$

6

A quartic function, $g(x)$, is shown.



Which function has a minimum value **less** than the minimum value of $g(x)$?

(A) $p(x) = x^4 + x^3 - 3x^2 + 2$

(B) $p(x) = x^4 + x^3 + 2x^2 - 1$

(C) $p(x) = 2x^4 - x^3 + 2x - 2$

(D) $p(x) = 2x^4 - x^3 - 3x + 1$

7

What model best fits the data in each table below?

x	-4	-2	0	2	4	6	8	10
y	3	-2	-4	-3	1	8	18	31

(A) linear

(B) quadratic

(C) cubic

(D) exponential

x	-5	-3	-1	0	1	2	3	4
y	0.2	0.8	3.1	6.4	13.1	24.9	50.3	101.1

(A) linear

(B) quadratic

(C) cubic

(D) exponential