

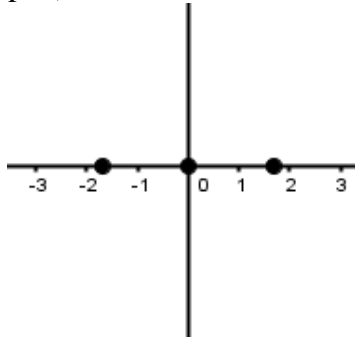
1] A polynomial function of least degree, a leading coefficient of 1, and the real zeros of $x = 0$ with multiplicity 3 and $x = \sqrt{2}$ and $x = -\sqrt{2}$.

B] Degree: _____

End Behavior: as $x \rightarrow -\infty$, $y \rightarrow$ _____ and as $x \rightarrow \infty$, $y \rightarrow$ _____

C] Write a factored form polynomial given the verbal description.

A] Graph (the zeros are labeled for you ☺)



D] Write the equation of the polynomial in standard form.

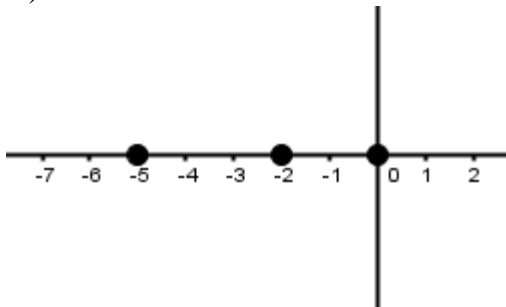
2] A polynomial of least degree with a positive leading coefficient has real zeros of $x = -5$ and $x = -2$, and $x = 0$ with multiplicity 2.

B] Degree: _____

End Behavior: as $x \rightarrow -\infty$, $y \rightarrow$ _____ and as $x \rightarrow \infty$, $y \rightarrow$ _____

C] Write a factored form polynomial given the verbal description.

A] Graph (the zeros are labeled for you ☺)



D] Write the equation of the polynomial in standard form.

3] A polynomial function of least degree, a leading coefficient of 1, and the real zero of $x = 2$ and imaginary zeros of $x = \pm 3i$.

A] Degree: _____

End Behavior: as $x \rightarrow -\infty$, $y \rightarrow$ _____ and as $x \rightarrow \infty$, $y \rightarrow$ _____

B] Write a factored form polynomial given the verbal description.

C] Write the equation of the polynomial in standard form.

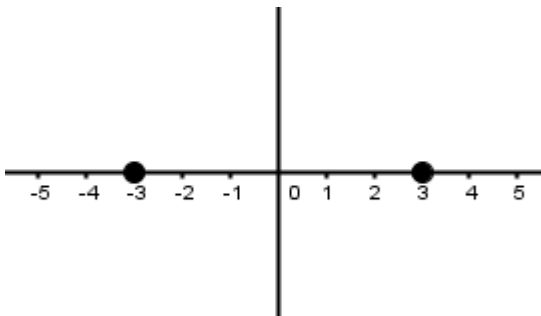
4] A polynomial of least degree with a positive leading coefficient has real zeros of $x = -3$ and $x = 3$ with multiplicity 2.

B] Degree: _____

End Behavior: as $x \rightarrow -\infty$, $y \rightarrow$ _____ and as $x \rightarrow \infty$, $y \rightarrow$ _____

A] Graph (the zeros are labeled for you 😊)

C] Write a factored form polynomial given the verbal description.



D] Write the equation of the polynomial in standard form.

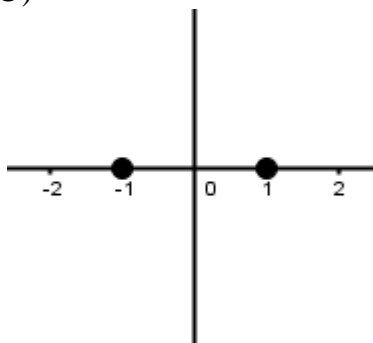
5] A polynomial of least degree with a negative leading coefficient has real zeros of $x = 1$ and $x = -1$, both with multiplicity 2.

B] Degree: _____

End Behavior: as $x \rightarrow -\infty$, $y \rightarrow$ _____ and as $x \rightarrow \infty$, $y \rightarrow$ _____

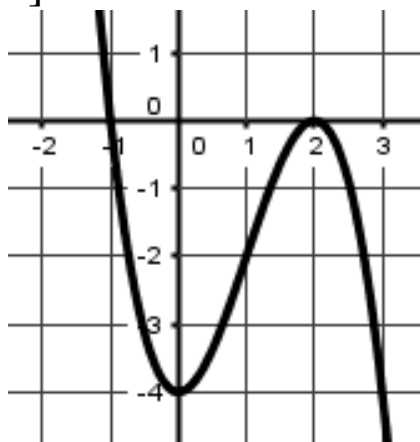
A] Graph (the zeros are labeled for you 😊)

C] Write a factored form polynomial given the verbal description.



D] Write the equation of the polynomial in standard form.

6]



A] Degree: _____ Sign of leading coefficient: _____

End Behavior: as $x \rightarrow -\infty$, $y \rightarrow$ _____ and as $x \rightarrow \infty$, $y \rightarrow$ _____

B] List the zeros of the graph including any multiplicity.

C] Write a factored form polynomial given the graph shown.

D] Write the equation of the polynomial in standard form.

7] A polynomial function of least degree, a leading coefficient of 1, and the imaginary zeros of $x = 1 + 3i$ and $x = 1 - 3i$.

A] Degree: _____

End Behavior: as $x \rightarrow -\infty$, $y \rightarrow$ ____ and as $x \rightarrow \infty$, $y \rightarrow$ ____

B] Write a factored form polynomial given the verbal description.

C] Write the equation of the polynomial in standard form.

8] A polynomial function of least degree, a leading coefficient of -1, real zeros of $x=1$ and $x=-1$, and the imaginary zero of $x = 1 + 3i$ and $x = 1 - 3i$. (Hint: Use answer from #7)

A] Degree: _____

End Behavior: as $x \rightarrow -\infty$, $y \rightarrow$ ____ and as $x \rightarrow \infty$, $y \rightarrow$ ____

B] Write a factored form polynomial given the verbal description.

C] Write the equation of the polynomial in standard form.