Bell work

Solve by factoring.

1. $6x^2 + 7x - 3 = 0$ 2. $25 - 4x^2 = 0$

3. $4x^2 - 35x - 9 = 0$ 4. $x^2 + 5x - 6 = 0$

Polynomial function:

$f(x) = a_nx^n + a_{n-1}x^{n-1} + ... + a_1x + a_0$

leading coefficient: a_n
degree: n
constant term: a_0

Degree	Type	Example
0	constant	
1	linear	
2	quadratic	
3	cubic	
4	quartic	
5	quintic	

1. Create a degree 3 binomial with a leading coefficient of 7 in standard form.

2. Create a degree 5 trinomial with a leading coefficient of -1 in standard form.

Direct Substitution:

3. $f(x) = x^4 + 2x^3 + 3x^2 - 7$ when x = -2

4. $g(x) = x^3 - 5x^2 + 6x + 1$ when x = 4

Synthetic Substitution / Division

5. $f(x) = x^4 + 2x^3 + 3x^2 - 7$ when x = -2

6. $g(x) = x^3 - 5x^2 + 6x + 1$ when x = 4

7. $f(x) = 5x^3 + 3x^2 - x + 7$ when x = -2

8. $g(x) = 2x^4 - 5x^3 - 4x + 8$ when x = 3

End Behavior

Degree odd & leading coefficient positive:

Degree odd & leading coefficient negative:

Degree is even and leading coefficient is positive:

Degree is even and leading coefficient is negative:

Graph the polynomial and state the interval where it is increasing and decreasing. Describe the end behavior.

9. $f(x) = 5x^3 - 2x^2 - 8x + 16$

10. $f(x) = -x^3 + x^2 + 3x - 3$

11. $f(x) = x^4 - x^3 - 4x^2 + 4$

Describe the degree and leading coefficient of the polynomial function whose graph is shown.