

Graphing Polynomials Review

1. Draw a picture show each kind of end behavior.

a) Odd degree, positive leading coefficient
(Ex: $f(x) = x^3$)

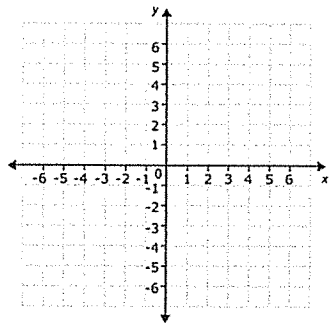
b) Odd degree, negative leading coefficient
(Ex: $f(x) = -x^3$)

c) Even degree, positive leading coefficient
(Ex: $f(x) = x^2$)

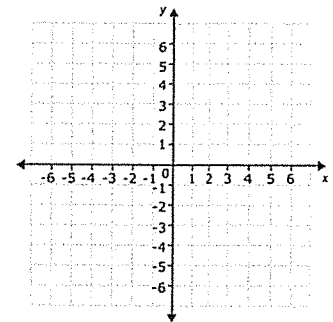
d) Even degree, negative leading coefficient
(Ex: $f(x) = -x^2$)

Graph:

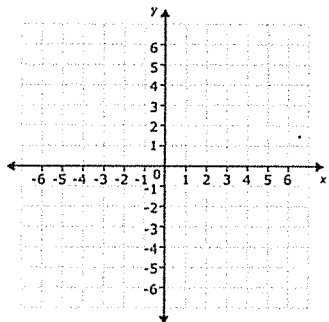
2. $(x + 3)(x - 1)^2$



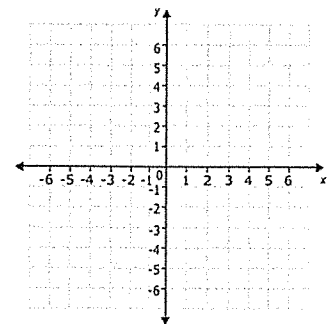
3. $-2x^3 + 8x^2 + 24x$



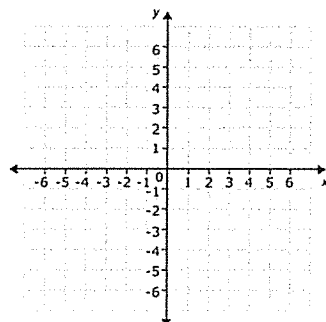
4. $-4x^4 + 36x^2$



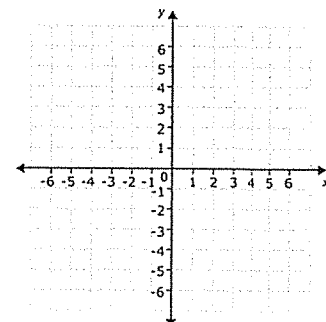
5. $x(x + 5)(x - 2)(x - 4)$



6. $x(x - 5)^2(2x - 1)^3$

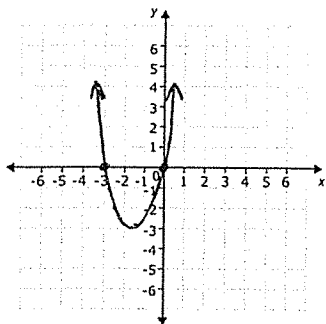


7. $-x^2(3x - 10)$

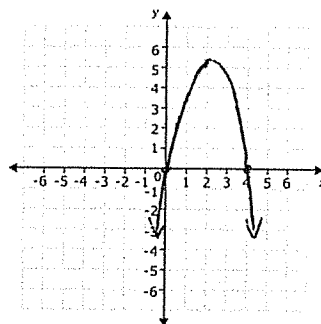


What polynomial is given in each graph?

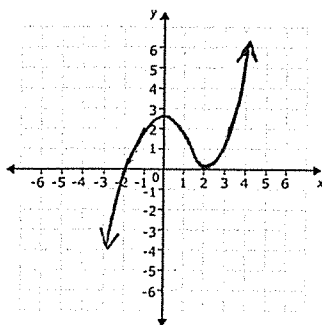
8.



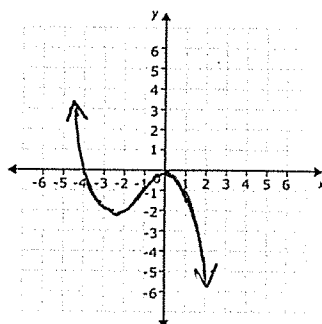
9.



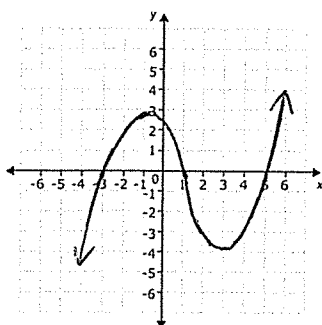
10.



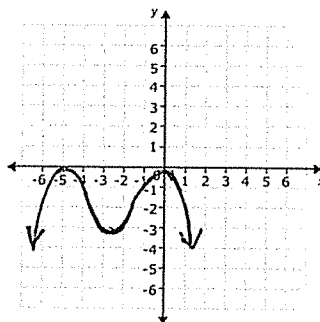
11.



12.



13.



14. Use your pictures from question # 1 to help you answer the following:

a) Suppose $P(x)$ is a polynomial of degree 5. What is the smallest number of x -intercepts (or roots) that this P could have? Support your answer.

b) Suppose $Q(x)$ is a polynomial of degree 200. What is the smallest number of x -intercepts (or roots) that this Q could have? Support your answer.