4-1

Practice

Polynomial Functions

State the degree and leading coefficient of each polynomial.

1. $6a^4 + a^3 - 2a$

2. $3p^2 - 7p^5 - 2p^3 + 5$

Write a polynomial equation of least degree for each set of roots.

3. $3, -0.5, 1$

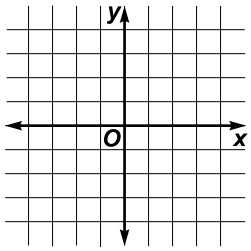
4. $3, 3, 1, 1, -2$

5. $\pm 2\boldsymbol{i}, 3, -3$

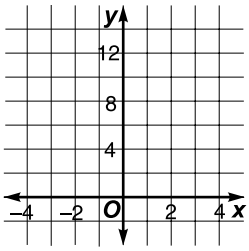
6. $-1, 3 \pm \boldsymbol{i}, 2 \pm 3\boldsymbol{i}$

State the number of complex roots of each equation. Then find the roots and graph the related function.

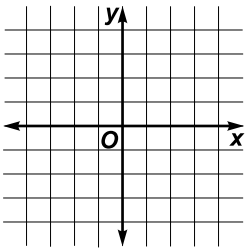
7. $3x - 5 = 0$



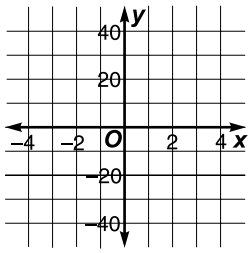
8. $x^2 + 4 = 0$



9. $c^2 + 2c + 1 = 0$



10. $x^3 + 2x^2 - 15x = 0$



11. ***Real Estate*** A developer wants to build homes on a rectangular plot of land 4 kilometers long and 3 kilometers wide. In this part of the city, regulations require a greenbelt of uniform width along two adjacent sides. The greenbelt must be 10 times the area of the development. Find the width of the greenbelt.