Practice Exercises

A. Find the roots of each polynomial function. Indicate the multiplicity of each root.

1. $f(x) = (x+4)^2(x-3)^3$
2. $h(x) = x(x-3)^4(x+6)^2$
3. $P(x) = x^2(x-9)$
4. $F(x) = (x+1)^2(x-5)$
5. $P(x) = (x+1)^5(x-1)^2$

B. Find the zeros of each function.

1. $P(x) = x^3 - 10x^2 + 32x - 32$
2. $P(x) = x^3 - 6x^2 + 11x - 6$

3. $P(x) = x^3 - 2x^2 + 4x - 8$

4. $P(x) = x^4 - 5x^2 + 4$

5. $P(x) = x^3 + x^2 - 12x - 12$

Problem Set

A. Find the roots of each polynomial function. Indicate the multiplicity of each root.

1. $f(x) = (x+3)^3(x-1)^5$
2. $h(x) = x^2(x-5)^3(x+6)^4$
3. $P(x) = x^4(x-5)$
4. $F(x) = (x+3)^4(x-7)$
5. $P(x) = (x+3)^4(x-3)^4$

B. Find the zeros of each function.

1. $P(x) = x^3 - 3x - 2$
2. $P(x) = x^4 - 13x^2 + 36$

3. $P(x) = x^4 - 3x^3 - 53x^2 - 9x$

4. $P(x) = x^3 + 3x^2 - 4x - 12$

5. $P(x) = x^3 + 7x^2 + 2x - 40$