Extra Practice #7

For 1-2, put in standard form, and then classify by degree and by number of terms.

1. $x(x + 5) - 5(x + 5)$

2. $a^3(a^2 + a + 1)$

For 3-5, write a polynomial function in standard form with the given zeroes.

3. x = -2, 3

4. $x = -1, 3, 4$

5. $x = 2,\ and\ x = 1(with\ multiplicity\ 2)$

In 6-8, use factoring to find the zeroes of each function.

6. $f(x) = x^4 - 8x^3 + 16x^2$

7. $f(x) = 9x^3 - 81x$

8. $f(x) = x^4 - 13x^2 + 36$

In 9–12, find <u>ALL</u> solutions. Use complex numbers if appropriate.

9. $4x^3 - 32 = 0$

10. $x^4 - 9x^2 = -14$

11. $2x^4 + 6x^3 - 8x^2 = 0$

12. $2x^3 + 2x^2 - x - 15 = x^3 + 5x - 3$

13. For the given function, state the zeroes and give the multiplicity of each.

$f(x) = (x + 4)^3(x + 1)^2$

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Answers:

1. $x^2 - 25$; quadratic; binomial
2. $a^5 + a^4 + a^3$; quintic; trinomial
3. $f(x) = x^2 - x - 6$
4. $f(x) = x^3 - 6x^2 + 5x + 12$
5. $f(x) = x^3 - 4x^2 + 5x - 2$
6. x = 0 (multiplicity 2), 4(multiplicity 2)
7. x = {-3, 0, 3}
8. x = { -3, -2, 2, 3}
9. x = $\{2, = -1 \pm i\sqrt{3}\}$
10. x = $\{\pm\sqrt{7}, \pm\sqrt{2}\}$
11. x = {0(multiplicity 2), -4, 1}
12. x = $\{\pm\sqrt{6}, -2\}$
13. x = {-4(multiplicity 3), -1(multiplicity 2)}

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