Use the given factor(s) to divide. Find the remaining roots without using a graphing calculator.

1. $f(x) = x^3 - 4x^2 - 15x + 18;\ (x - 6)$

$$X = 6, -3, 1$$

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2. $f(x) = x^3 - 8x^2 + 5x + 14; (x + 1)$

$$X = -1, 7, 2$$

3. $f(x) = 3x^3 + 4x^2 - 35x - 12; (x + 4)$

$$X = -4, -\tfrac{1}{3}, 3$$

4. $f(x) = -8x^3 - 56x^2 - 70x + 50;\ (x + 5)$

$$X = -5, -\tfrac{5}{2}, \tfrac{1}{2}$$

5. $f(x) = 3x^4 + 2x^3 - 23x^2 + 2x + 24; (x - 2)\ \&\ (x + 3)$

$$X = 2, -3, \tfrac{4}{3}, -1$$

- Use your calculator to find all of the real zero(s).
- Use synthetic division with the real zero(s) to get a depressed polynomial of degree 2.
- Find the remaining roots without using a graphing calculator.

6. $f(x) = x^3 + 6x^2 + 21x + 26$

$$X = -2 \pm 3i, -2$$

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7. $f(x) = x^3 - 7x^2 + 25x - 175$

$$X = \pm 5i, 7$$

8. $f(x) = x^4 - 65x^2 + 170x + 234$

$$X = 5 \pm i, -1, -9$$

9. $f(x) = x^4 - 6x^3 + 12x^2 + 6x - 13$

$$X = 3 \pm 2i, -1, 1$$

10. $f(x) = x^6 - 2x^5 - 10x^4 + 10x^3 + 25x^2 + 12x + 36$

$$X = \pm i, -2, -2, 3, 3$$