Precalculus
2.5 Homework
Odd Answers

1. remainder 8, not a factor

3. remainder 0, factor

5. $\pm 1, \pm \frac{1}{3}$

7. $\pm 1, \pm 3, \pm 9, \pm \frac{1}{2}, \pm \frac{3}{2}, \pm \frac{9}{2}, \pm \frac{1}{3}, \pm \frac{1}{6}$

9. Zeros: $-3, -1, 2$; Factored form: $f(x) = (x+3)(x+1)(x-2)$

11. Zeros: $-1, \frac{1}{2}, -\sqrt{3}, \sqrt{3}$; Factored form: $f(x) = 2(x+1)\left(x-\frac{1}{2}\right)\left(x+\sqrt{3}\right)\left(x-\sqrt{3}\right)$

13. $x = \frac{2}{3}$ or $x = -1 + \sqrt{2}$ or $x = -1 - \sqrt{2}$

15. $-i$ and $1-i$

17. $2-i$ and $-3+i$

19. $f(x) = x^5 - 4x^4 + 7x^3 - 8x^2 + 6x - 4$

21. $3 + 2i, -2,$ and 5

23. Zeros: $2, 3-2i, 3+2i$; Factored form: $f(x) = (x-2)(x-3+2i)(x-3-2i)$

25. Zeros: $-4, \frac{1}{3}, 2-3i, 2+3i$; Factored form: $f(x) = 3(x+4)\left(x-\frac{1}{3}\right)(x-2+3i)(x-2-3i)$