4.4 Practice A

1. $x(x - 4)(x + 3)$ 2. $9p^5(p + 2)(p - 2)$

3. $3n^4(n - 8)(n - 3)$ 4. $2k^2(k + 11)(k - 11)$

5. $w^2(2w + 3)(w - 5)$ 6. $q^4(3q + 4)(q - 7)$

7. $(x + 3)(x^2 - 3x + 9)$

8. $(y + 10)(y^2 - 10y + 100)$

9. $(w - 5)(w^2 + 5w + 25)$

10. $(y - 3)(y^2 + 4)$ 11. $(q - 2)(q^2 + 9)$

12. $(d + 5)(2d^2 + 3)$ 13. $(x - 6)(x - 3)(x + 3)$

14. $(6p^2 - 5)(6p^2 + 5)$ 15. $(n^2 + 4)(n^2 + 7)$

16. $(y^2 + 4)(y + 2)(y - 2)$

17. no   18. yes   19. yes   20. no

21. *Sample answer:* $f(x) = x^3 + 5x^2 - 6x; (x - 1);$
     $x(x - 1)(x + 6) = x^3 + 5x^2 - 6x$

22. $k = 9; f(x) = 3x^3 - 17x^2 - 9x + 18;$
     $3x^3 - 17x^2 - 9x + 18 = (x - 6)(3x^2 + x - 3)$