

19. D; $(2)^2 + (2) - 3 = 3$ so the remainder must be 3.

20. A; $(2)^2 - (2) - 3 = -1$ so the remainder must be -1 .

21. C; $(2)^2 - (2) + 3 = 5$ so the remainder must be 5.

22. B; $(2)^2 + (2) + 3 = 9$ so the remainder must be 9.

23. The quotient should be one degree less than the dividend.

$$\frac{x^3 - 5x + 3}{x - 2} = x^2 + 2x - 1 + \frac{1}{x - 2}$$

24. The coefficient of 0 for the quadratic term of the dividend was not included.

$$\begin{array}{r|rrrr} 2 & 1 & 0 & -5 & 3 \\ & & 2 & 4 & -2 \\ \hline & 1 & 2 & -1 & 1 \end{array}$$

$$\frac{x^3 - 5x + 3}{x - 2} = x^2 + 2x - 1 + \frac{1}{x - 2}$$

25. $f(-1) = 37$

26. $f(3) = 13$

27. $f(2) = 11$

28. $f(-4) = -27$

29. $f(6) = 181$

30. $f(10) = 903$

31. $f(3) = 115$

32. $f(5) = -752$

38. a. -4

b. The remainders are both 0 because $f(-3) = f(-1) = 0$.

40. $5x^3 - 3x^2 + 21x - 8$; *Sample answer:* Multiply by $x + 2$.