

$$29. \begin{aligned} &6x^4 - 162x \\ &6x(x^3 - 27) \\ &6x(x-3)(x^2+3x+9) \end{aligned}$$

$$30. \begin{aligned} &40 - 5t^3 \\ &5(8 - t^3) \\ &5(2-t)(4+2t+t^2) \\ &5(t-2)(t^2+2t+4) \end{aligned}$$

$$32. \begin{aligned} V(x) &= 168 - 28x - 28x^2 \\ &= -28(x^2 + x - 6) \\ &= -28(x+3)(x-2) \end{aligned}$$

$$\begin{aligned} x+3 &= 0 & x-2 &= 0 \\ \boxed{x=-3} & & \boxed{x=2} & \end{aligned}$$

$$33. \begin{aligned} &x^6 - 14x^4 + 49x^2 \\ &x^2(x^4 - 14x^2 + 49) \\ &x^2(x^2 - 7)(x^2 - 7) \end{aligned}$$

$$\begin{aligned} 34. &(2x^3 + x^2 - 72x - 36) \\ &x^2(2x+1) - 36(2x+1) \\ &(2x+1)(x^2 - 36) \\ &(2x+1)(x-6)(x+6) \end{aligned}$$

$$\begin{aligned} 35. &(4x^3 + x^2 - 16x - 4) \\ &x^2(4x+1) - 4(4x+1) \\ &(4x+1)(x^2 - 4) \\ &(4x+1)(x+2)(x-2) \end{aligned}$$

$$\begin{aligned} 36. &9x^9 - 16x^7 + 9x^6 - 16x^4 \\ &x^4(9x^5 - 16x^3 + 9x^2 - 16) \\ &x^4(x^3(9x^2 - 16) + 1(9x^2 - 16)) \\ &x^4(x^3 + 1)(9x^2 - 16) \\ &x^4(x+1)(x^2-x+1)(3x+4)(3x-4) \end{aligned}$$

$$\begin{aligned} 37. &8x^7 - 4x^5 - 18x^3 + 9x \\ &x((8x^6 - 4x^4) - 18x^2 + 9) \\ &x(4x^4(2x^2 - 1) - 9(2x^2 - 1)) \\ &x(4x^4 - 9)(2x^2 - 1) \\ &x(2x^2 + 3)(2x^2 - 3)(2x^2 - 1) \end{aligned}$$

$$\begin{aligned} 38. &x^{13} - 15x^9 - 16x^5 \\ &x^5(x^8 - 15x^4 - 16) \\ &x^5(x^4 - 16)(x^4 + 1) \\ &x^5(x^4 + 1)(x^2 + 4)(x^2 - 4) \\ &x^5(x^4 + 1)(x^2 + 4)(x+2)(x-2) \end{aligned}$$