

What happens when Zonk... (pg. 104)

$$\begin{aligned} \textcircled{G} \quad n^3 + 8n^2 + 12n &= 0 \\ n(n^2 + 8n + 12) &= 0 \\ n(n+6)(n+2) &= 0 \\ \boxed{n=0, -6, -2} \end{aligned}$$

$$\begin{aligned} \textcircled{A} \quad m^3 - 16m &= 0 \\ m(m^2 - 16) &= 0 \\ m(m+4)(m-4) &= 0 \\ \boxed{m=0, \pm 4} \end{aligned}$$

$$\begin{aligned} \textcircled{D} \quad a^3 + 3a^2 &= 10a \\ a^3 + 3a^2 - 10a &= 0 \\ a(a^2 + 3a - 10) &= 0 \\ a(a+5)(a-2) &= 0 \\ \boxed{a=0, -5, 2} \end{aligned}$$

$$\begin{aligned} \textcircled{E} \quad 2d^3 + 6d &= 7d^2 \\ 2d^3 - 7d^2 + 6d &= 0 \\ d(2d^2 - 7d + 6) &= 0 \\ d(2d-3)(d-2) &= 0 \\ \boxed{d=0, \frac{3}{2}, 2} \end{aligned}$$

$$\begin{aligned} \textcircled{O} \quad x^4 - 10x^2 + 9 &= 0 \\ (x^2 - 9)(x^2 - 1) &= 0 \\ (x+3)(x-3)(x+1)(x-1) &= 0 \\ \boxed{x=\pm 3, \pm 1} \end{aligned}$$

$$\begin{aligned} \textcircled{I} \quad u^3 &= 14u^2 + 32u \\ u^3 - 14u^2 - 32u &= 0 \\ u(u^2 - 14u - 32) &= 0 \\ u(u+2)(u-16) &= 0 \rightarrow \boxed{u=0, -2, 16} \end{aligned}$$

$$\begin{aligned} \textcircled{A} \quad 8y^3 &= 2y \\ 8y^3 - 2y &= 0 \\ 2y(4y^2 - 1) &= 0 \\ 2y(2y+1)(2y-1) &= 0 \\ \boxed{y=0, \pm \frac{1}{2}} \end{aligned}$$

$$\begin{aligned} \textcircled{H} \quad 9t^2 + 2t &= 5t^3 \\ 0 &= 5t^3 - 9t^2 - 2t \\ 0 &= t(5t^2 - 9t - 2) \\ 0 &= t(5t+1)(t-2) \\ \boxed{t=0, -\frac{1}{5}, 2} \end{aligned}$$

$$\begin{aligned} \textcircled{G} \quad 9k^3 + 30k^2 &= 24k \\ 9k^3 + 30k^2 - 24k &= 0 \\ k(9k^2 + 30k - 24) &= 0 \\ k(3k - 2)(3k + 12) &= 0 \\ \boxed{k=0, \frac{2}{3}, -4} \end{aligned}$$

$$\begin{aligned} \textcircled{T} \quad x^4 - 13x^2 + 36 &= 0 \\ (x^2 - 9)(x^2 - 4) &= 0 \\ \boxed{x=\pm 3, x=\pm 2} \end{aligned}$$

$$\begin{aligned} \textcircled{H} \quad 17v^2 + 5v &= -6v^3 \\ 6v^3 + 17v^2 + 5v &= 0 \\ v(6v^2 + 17v + 5) &= 0 \\ v(3v+1)(2v+5) &= 0 \\ \boxed{v=0, -\frac{1}{3}, -\frac{5}{2}} \end{aligned}$$

$$\begin{aligned} \textcircled{B} \quad 5W^3 &= 40W^2 - 80W \\ 5W^3 - 40W^2 + 80W &= 0 \\ 5W(W^2 - 8W + 16) &= 0 \\ 5W(W-4)(W-4) &= 0 \\ \boxed{W=0, 4} \end{aligned}$$

$$\begin{aligned} \textcircled{N} \quad 30q^3 + 14q^2 - 4q &= 0 \\ 2q(15q^2 + 7q - 2) &= 0 \\ 2q(5q - 1)(3q + 2) &= 0 \\ \boxed{q=0, \frac{1}{5}, -\frac{2}{3}} \end{aligned}$$