

What Happened When Zonk Blew Air Into a Rubber Glove?

Key

Solve each equation below. Find the solution set at the bottom of the page and write the letter of that exercise above it.

(G) $n^3 + 8n^2 + 12n = 0$

(A) $m^3 - 16m = 0$

(D) $a^3 + 3a^2 = 10a$

(I) $u^3 = 14u^2 + 32u$

(E) $2d^3 + 6d = 7d^2$

(O) $x^4 - 10x^2 + 9 = 0$

(A) $8y^3 = 2y$

(H) $9t^2 + 2t = 5t^3$

(G) $9k^3 + 30k^2 = 24k$

(T) $x^4 - 13x^2 + 36 = 0$

(H) $17v^2 + 5v = -6v^3$

(B) $5w^3 = 40w^2 - 80w$

(N) $30q^3 + 14q^2 - 4q = 0$



H	E		G	O	T		A		B	I	G		H	A	N	D
$\{0, -\frac{1}{5}, 2\}$	$\{0, \frac{3}{2}, 2\}$	$\{0, \frac{3}{2}, -\frac{3}{2}\}$	$\{0, -2, -6\}$	$\{1, -1, 3, -3\}$	$\{2, -2, 3, -3\}$	$\{0, 3, -2\}$	$\{0, 4, -4\}$	$\{0, \frac{2}{15}, -1\}$	$\{0, 4\}$	$\{0, 16, -2\}$	$\{0, \frac{2}{3}, -4\}$	$\{0, \frac{1}{2}, 5\}$	$\{0, -\frac{5}{2}, -\frac{1}{3}\}$	$\{0, \frac{1}{2}, -\frac{1}{2}\}$	$\{0, \frac{1}{5}, -\frac{3}{3}\}$	$\{0, 2, -5\}$

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

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

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

$$\begin{aligned} A. 8y^3 - 24 &= 0 \\ 8y^3 - 24 &= 0 \\ 24(4y^2 - 1) &= 0 \\ 24(2y+1)(2y-1) &= 0 \\ \boxed{y=0, \pm \frac{1}{2}} \end{aligned}$$

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

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

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

$$\begin{aligned} G. 9k^3 + 30k^2 &= 24k \\ 9k^3 + 30k^2 - 24k &= 0 \\ 3k(3k^2 + 10k - 8) &= 0 \\ 3k(3k-2)(k+4) &= 0 \\ \boxed{k=0, \frac{2}{3}, -4} \end{aligned}$$

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

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

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

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

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