$(6x+28)^{1/3} = 2 + (6x-28)^{1/3}$

$b = (6x-28)^{1/3}$

$(2+b)^3 = (4+4b+b^2)(2+b)$

$= 8 + 8b + 2b^2 + 4b + 4b^2 + b^3$

$(6x+28) = b^3 + 6b^2 + 12b + 8$

$(6x+20) = b^3 + 6b^2 + 12b$

$6x + 20 = 6x - 28 + 6b^2 + 12b$

$48 = 6b^2 + 12b$

$8 = b^2 + 2b = b(b+2)$

$0 = b^2 + 2b - 8$

$b = 2$

so — unsub

$2 = (6x-28)^{1/3}$

$8 = 6x - 28$

$36 = 6x$

$6 = x$

Check solution

$x = 6$

$(36+28)^{1/3} = 2 + (36-28)^{1/3}$

$64^{1/3} = 2 + (8)^{1/3}$

$4 = 2 + 2$

Solution checks.

Problem #84

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Mathematical Quickies

Charles W. Trigg