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d) factorisation method

i) $x^2 + 9x + 8 = 0$

~~$(x + 9)(x - 1)$~~

~~9~~ +

$(x + 8)(x + 1)$

$x = -8 \text{ or } -1$

$\frac{8}{81}$

ii) $12x^2 - 5x - 3 = 0$

~~$(12x) (4x)$~~

~~$(6x - 0.5)(2x - 1)$~~

$(4x - 3)(3x + 1)$

$x = -\frac{3}{4} \text{ or } -\frac{1}{3}$

$-0.75 \text{ or } -0.3$

iii) $2x^2 + 17x = -30$

$2x^2 + 17x + 30 = 0$

~~$(2x + 15)(x + 2)$~~

$(2x + 5)(x + 6)$

~~$x = -2.5 \text{ or } -6$~~

iv) $x^2 - 256 = 0$

$\sqrt{256} = 16$

$(x - 16)(x + 16)$

$x = 16 \text{ or } -16$

e) Solve for x

$(x+5)^2 - x^2 - 32 = (x+1)(x+2) - x^2$

$2x^2 + 10x + 25 - x^2 - 32 = x^2 + 3x + 2 - x^2$

$10x + 25 - 32 = 3x + 2$

$13x = 2 + 32 - 25$

$13x = 9$

$x = \frac{9}{13} = 0.692$