Review: Equation Solving

To solve an equation we must isolate the unknown variable by using inverse operations. One easy trick is to use the mnemonic BEDMAS backwards.

Solve the following equations

a) $2x - 5 = 7$ $+5$ $+5$

$\frac{2x}{2} = \frac{12}{2}$

$x = 6$

b) $3(x - 4) = 5x + 2$

$3x - 12 = 5x + 2$ $-3x$ -2 $-3x$ -2

$\frac{-14}{2} = \frac{2x}{2}$

$x = -7$

c) $4 - 5(x + 3) = 2(x-6)$

$4 - 5x - 15 = 2x - 12$

$5x$

12

$\frac{1}{7} = \frac{7x}{7}$

$\therefore x = \frac{1}{7}$

d) $(x + 1)(x - 2) - (x + 3)(x - 4) = 2x$

$(x^2 - 2x + x - 2) - (x^2 - 4x + 3x - 12) = 2x$

$(x^2 - x - 2) - (x^2 - x - 12) = 2x$

$x^2 - x - 2 - x^2 + x + 12 = 2x$

$\frac{10}{2} = \frac{2x}{2}$

$5 = x$

e) $\frac{2}{3}(x-5)=(x+4)$ ×3

$3x\frac{2}{3}(x-5)=3(x+4)$

$2x-10=3x+12$

$-22=x$

f) $\frac{3}{4}(x-5)=\frac{1}{3}(x+4)$ ×12

$(12)\frac{3}{4}(x-5)=(12)\frac{1}{3}(x+4)$

$9x-45=4x+16$

$\frac{5x}{5}=\frac{61}{5}$

$x=\frac{61}{5}$

g) $\frac{(2x-6)}{5}=\frac{(3x+5)}{4}$

$4(2x-6)=5(3x+5)$

$8x-24=15x+25$

$\frac{-7x}{-7}=\frac{49}{-7}$

$x=-7$

h) $\frac{1}{5}x-\frac{2}{3}=\frac{3}{5}x+\frac{5}{3}$

$-\frac{2}{3}-\frac{5}{3}=\frac{3}{5}x-\frac{1}{5}x$

$15\left(-\frac{7}{3}\right)=\left(\frac{2}{5}x\right)15$

$\frac{-35}{6}=\frac{6x}{6}$

$x=-\frac{35}{6}$