$$\frac{\text{ADVANCED ALGEBRA.}}{\text{Clear working needed}}$$

$$i. Solve the following.
(a) $7(x+2) - 4(x-2) = x+5$

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

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

$$(c) \text{ Rearrange } \frac{b}{a+x} = w$$

$$to \text{ make } x \text{ the subject.}$$$$

Advanced Algebra (2). Solve these equations: 1. $6(x-3) - 2(x-4) = 5(x+2)$	$\frac{\text{More Advanced (2).}}{6. 4 - \frac{3(x+2)}{2} = \frac{2(x-5)}{3}$
2.(a) $\frac{3x}{4} > -12$ (b) $\frac{-4x}{5} > -20$	7. Rearrange the equations to make x the subject of each. (a) $ax - by = w$
3. $6(x-4) < -4(2-x)$	$(b) \frac{x}{p} + c = b - k$
$4. \frac{5 x}{6} + \frac{3}{4} = \frac{x}{3} + 2$	$(c) \underline{c} = p + g$
	$(d) \underbrace{y}_{x-v} = b$
5. $\frac{9}{x+7} = \frac{6}{x-4}$	

MODEL SOLUTIONSClear working needed1. Solve the following.(a) $7(x+2) - 4(x-2) = x + 5$	$\frac{\text{More Advanced.}}{2. \text{ Solve}}$ $(a) \frac{12}{x+3} = \frac{8}{x-2}$
$7x + 14 - 4x + 8 = x + 5$ $3x + 22 = x + 5$ $2x + 22 = 5$ $2x = -17$ $x = -\frac{17}{2}$	$\frac{12}{x+3} = \frac{8}{x-2}$ $12(x-2) = 8(x+3)$ $12x-24 = 8x+24$ $4x-24 = 24$ $4x = 48$
(b) $2(x-3) = -5(6-x)$ 2x-6 = -30 + 5x -6 = 30 + 3x	$x = 12$ (b) $6 - \frac{2(x+3)}{5} = \frac{3(x-4)}{2}$ $10 \left(6 - \frac{2(x+3)}{5} \right) = 10 \left(\frac{3(x-4)}{2} \right)$
$-36 = 3x$ $-12 = x$ (c) $\frac{x}{4} + \frac{7}{12} = \frac{x}{3} + \frac{5}{6}$ $12\left(\frac{x}{4} + \frac{7}{12}\right) = 12\left(\frac{x}{3} + \frac{5}{6}\right)$	$60 - 4(x + 3) = 15(x - 4)$ $60 - 4x - 12 = 15x - 60$ $48 = 19x - 60$ $108 = 19x$ $\frac{108}{19} = x$
3x + 7 = 4x + 10 7 = x + 10 -3 = x	(c) Rearrange $\underline{b} = w$ a + x to make x the subject. b = wa + wx b - wa = wx $\frac{b - wa}{w} = x$

Advanced Algebra(2). Solve these equations: 1. 6(x-3) - 2(x-4) = 5(x+2)6x - 18 - 2x + 8 = 5x + 104x - 10= 5x + 10-10 = x + 10-20 = x $\begin{array}{cc} 2.(a) & \underline{3x} & > -12 \\ & 4 \end{array}$ 3x > 48x > 16 $(b) \quad \frac{-4x}{5} > -20$ -4x > -100*x* < 25 3. 6(x-4) < -4(2-x)6x - 24 < -8 + 4x2x - 24 < -82x < 16x < 8 $4. \quad \frac{5 x}{6} + \frac{3}{4} = \frac{x}{3} + 2$ $12\left(\frac{5}{6}\frac{x}{4}+\frac{3}{4}\right) = 12\left(\frac{x}{3}+2\right)$ $\begin{array}{rcl}
10x + 9 &= 4x + 24 \\
6x &= 15 \\
x &= \frac{15}{6} &= \frac{5}{2}
\end{array}$ 5. $\frac{9}{x+7} = \frac{6}{x-4}$ 9(x-4) = 6(x+7)9x - 36 = 6x + 423x - 36 = 423x = 78x = 26

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

 $6\left(4 - \frac{3(x+2)}{2}\right) = 6\left(\frac{2(x-5)}{3}\right)$
 $24 - 9(x+2) = 4(x-5)$
 $24 - 9x - 18 = 4x - 20$
 $6 = 5x - 20$
 $26 = 5x$
 $\frac{26}{5} = x$
7. Rearrange the equations to make
the subject of each.

e x t

(a)
$$ax - by = w$$

 $ax = w + by$
 $x = w + by$
 a
(b) $\frac{x}{p} + c = b - k$
 $\frac{p}{p} = b - k - c$
 p
 $x = p(b - k - c)$
(c) $\frac{c}{x} = p + g$
 $\frac{c}{(p + g)} = x$
(d) $\frac{y}{x - v} = b$
 $\frac{y}{b} = x - v$
 $\frac{y}{b} + v = x$