**ADVANCED ALGEBRA.**

**Clear working needed  
*1. Solve the following.***

***(a) 7(x + 2) – 4(x – 2) = x + 5***

***(b) 2(x – 3) = -5(6 – x)***

***(c) x + 7 = x + 5***

***4 12 3 6***

**More Advanced.**

2. Solve

***(a) 12 = 8***

***x + 3 x – 2***

***(b) 6 – 2(x + 3) = 3(x – 4)***

***5 2***

***(c) Rearrange b = w***

***a + x***

***to make x the subject.***

**Advanced Algebra (2).**

Solve these equations:

***1. 6(x – 3) – 2(x – 4) = 5(x + 2)***

***2.(a) 3x > -12***

***4***

***(b) - 4x > -20***

***5***

***3. 6(x – 4) < -4(2 – x )***

***4. 5 x + 3 = x + 2***

***6 4 3***

***5. 9 = 6***

***x + 7 x – 4***

**More Advanced (2).**

***6. 4 – 3(x + 2) = 2(x – 5)***

***2 3***

***7. Rearrange the equations to make x the subject of each.***

***(a) ax – by = w***

***(b) x + c = b – k***

***p***

***(c) c = p + g***

***x***

***(d) y = b***

***x – v***

**MODEL SOLUTIONS**

**Clear working needed  
*1. Solve the following.***

***(a) 7(x + 2) – 4(x – 2) = x + 5***

***7x + 14 – 4x + 8 = x + 5***

***3x + 22 = x + 5***

***2x + 22 = 5***

***2x = - 17***

***x = - 17***

***2***

***(b) 2(x – 3) = -5(6 – x)***

***2x – 6 = - 30 + 5x***

***– 6 = 30 + 3x***

***- 36 = 3x***

***- 12 = x***

***(c) x + 7 = x + 5***

***4 12 3 6***

***12 x + 7 = 12 x + 5***

***4 12 3 6***

***3x + 7 = 4x + 10***

***7 = x + 10***

***- 3 = x***

**More Advanced.**

2. Solve

***(a) 12 = 8***

***x + 3 x – 2***

***12 = 8 .***

***x + 3 x – 2***

***12( x – 2) = 8( x + 3)***

***12x – 24 = 8x + 24***

***4x – 24 = 24***

***4x = 48***

***x = 12***

***(b) 6 – 2(x + 3) = 3(x – 4)***

***5 2***

***10 6 – 2(x + 3) = 10 3(x – 4)***

***5 2***

***60 – 4(x + 3) = 15(x – 4)***

***60 – 4x – 12 = 15x – 60***

***48 = 19x - 60***

***108 = 19x***

***108 = x***

***19***

***(c) Rearrange b = w***

***a + x***

***to make x the subject.***

***b = wa + wx***

***b – wa = wx***

***b – wa = x***

***w***

**Advanced Algebra(2).**

Solve these equations:

***1. 6(x – 3) – 2(x – 4) = 5(x + 2)***

***6x – 18 – 2x + 8 = 5x + 10***

***4x – 10 = 5x + 10***

***- 10 = x + 10***

***-20 = x***

***2.(a) 3x > -12***

***4***

***3x > 48***

***x > 16***

***(b) - 4x > -20***

***5***

***-4x > -100***

***x < 25***

***3. 6(x – 4) < -4(2 – x )***

***6x – 24 < -8 + 4x***

***2x – 24 < - 8***

***2x < 16***

***x < 8***

***4. 5 x + 3 = x + 2***

***6 4 3***

***12 5 x + 3 = 12 x + 2***

***6 4 3***

***10x + 9 = 4x + 24***

***6x = 15***

***x = 15 = 5***

***6 2***

***5. 9 = 6***

***x + 7 x – 4***

***9( x – 4) = 6( x + 7)***

***9x – 36 = 6x + 42***

***3x – 36 = 42***

***3x = 78***

***x = 26***

**More Advanced(2).**

***6. 4 – 3(x + 2) = 2(x – 5)***

***2 3***

***6 4 – 3(x + 2) = 6 2(x – 5)***

***2 3***

***24 – 9(x + 2) = 4(x – 5)***

***24 – 9x – 18 = 4x – 20***

***6 =5x – 20***

***26 = 5x***

***26 = x***

***5***

***7. Rearrange the equations to make x the subject of each.***

***(a) ax – by = w***

***ax = w + by***

***x = w + by***

***a***

***(b) x + c = b – k***

***p***

***x = b – k – c***

***p***

***x = p(b – k – c )***

***(c) c = p + g***

***x***

***c = x***

***(p + g)***

***(d) y = b***

***x – v***

***y = x – v***

***b***

***y + v = x***

***b***