**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***