PRACTICE FOR ESSENTIAL LINEAR EQUATION SOLVING. (mainly MERIT level)

Solve the following equations, showing all working clearly.

***(a) 5x – 3 ≥ x + 3***

 ***8 2 4***

 ***(b) 5(x – 4) – 3(x + 8) > 2(4x – 6)***

***(c) 5(2x + 3) > – 2(1 – 3x)***

***(d) 3x + 4x = 2***

 ***5 3***

***(e) Solve 8 = 5 .***

 ***(x – 2) (3x – 2)***

***(f) 5 – (2x – 3) = 2( 3x – 5)***

 ***6 4 3***

(f) There are three numbers, A, B and C.

 B is 3 times A and C is 8 more than A.

 Altogether, A + B + C = 108.

 **Write an equation** and solve it to find A, B

 and C.

(g) I have 3 consecutive odd numbers.

 I add 4 times the smallest to 3 times the

 largest then subtract 5 times the middle one.

 The answer is 16.

 **Write an equation** and solve it to find

 the 3 numbers.

**MODEL SOLUTIONS**

***(a) 5x – 3 ≥ x + 3***

 ***8 2 4***

 ***8 5x – 3 ≥ 8 x + 3***

 ***8 2 4***

 ***5x – 12 ≥ 2x + 24***

 ***3x ≥ 36***

 ***x ≥ 12***

 (b) ***5(x – 4) – 3(x + 8) > 2(4x – 6)***

 ***5x – 20 – 3x – 24 > 8x – 12***

 ***2x – 44 > 8x – 12***

 ***- 32 > 6x***

 ***-16 > x***

 ***3***

***(c) 5(2x + 3) > – 2(1 – 3x)***

 ***10x + 15 > - 2 + 6x***

 ***4x > - 17***

 ***x > -17***

 ***4***

***(d) 3x + 4x = 2***

 ***5 3***

 ***15 3x + 4x = 15 × 2***

 ***5 3***

 ***9x + 20x = 30***

 ***29x = 30***

 ***x = 30***

 ***29***

***(e) Solve 8 = 5 .***

 ***(x – 2) (3x – 2)***

 ***8(3x – 2) = 5( x – 2)***

 ***24x – 16 = 5x – 10***

 ***19x = 6***

 ***x = 6 .***

 ***19***

***(f) 5 – (2x – 3) = 2( 3x – 5)***

 ***6 4 3***

 ***12 5 – (2x – 3) = 12 2( 3x – 5)***

 ***6 4 3***

 ***10 – 3(2x – 3) = 8(3x – 5)***

 ***10 – 6x + 9 = 24x – 40***

 ***19 = 30x – 40***

 ***49 = 30x***

 ***49 = x***

 ***30***

(f) There are three numbers, A, B and C.

 B is 3 times A and C is 8 more than A.

 Altogether, A + B + C = 108.

 **Write an equation** and solve it to find A, B

 and C.

 ***B = 3A and C = A + 8***

 ***So if A + B + C = 108***

***Then A + 3A + A + 8 = 108***

**∴ *5A + 8 = 108***

 ***5A = 100***

 ***A = 20***

 ***so B = 60***

 ***and C = 28***

(g) I have 3 consecutive odd numbers.

 I add 4 times the smallest to 3 times the

 largest then subtract 5 times the middle one.

 The answer is 16.

 **Write an equation** and solve it to find

 the 3 numbers.

***If x is odd , the next two are x + 2 and x + 4***

***So 4x + 3(x + 4) – 5(x + 2) = 16***

 ***4x + 3x + 12 – 5x – 10 = 16***

 ***2x + 2 = 16***

 ***2x = 14***

 ***x = 7***

***the three numbers are:***

 ***7, 9, 11***