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***