Grade 7 FINAL EXAM PREPARATION

1. Write an algebraic expression for each of the following :
    a. Subtract two times of *a* from the square of *b*
    b. The sum of three consecutive integers, if the smallest integers is *n*
    c. The average of *a* and two times of *b*
    d. John's age, given that his brother is *y* years old and John is 3 years older than his brother
    e. The total cost of x shirts and y shoes, where shirts cost $3 each and shoes $7 each

2. Evaluate the following expressions when p = 2, q = 3 and r = 1 :

    a. 2pq – r

    b. p(4r – q)

    c. $\frac{1}{2}p^2 - 3qr$

    d. $3r^2 + \frac{2}{3}q - 4p$

Simplify each of the following

3. -5c + 3d – d + 2f + 3c
4. -5(c + 3d) – d + 7(f + 2d – c)
5. 3(x – 2y) – 2(3x – y) + 6(x – y)
6. 2(b + 4c) – b – 3c
7. -2(a + b – 2c) – (3a + b – 2c)
8. 7c - 6a + 3c
9. 2(a - b) + 4b - 5
10. (y - 4) - (2y -3x -1)
11. (2x + 4z – 6y) – (–5x – 7z + y)
12. 3[2a –(3c+a)] – 4(a + b)
13. 5f –[3(2f – 3) – 4]
14. -5 – 2(7 – 6d)
15. 5(6b – 8) ++ 6(5c – 7) – (3b – 5c)

16. 2(3r – 7s) –(2r +7)
17. -2(h + 2) – 3(h – 2)
18. 2(b – 7) + 2b + 7
19. a + b +3(a + 2b + 4) –(3 – a + b)
20. 3r – (-2r – 7) – (-5r + 3)
21. $\dfrac{2x - y}{2} + \dfrac{x - y}{3}$
22. $\dfrac{x + y}{2} - \dfrac{x + 5y}{4} + \dfrac{5x - 4y}{8}$
23. $\dfrac{2x - 3y}{5} - \dfrac{x - 6y}{10} + \dfrac{5x + 6y}{15}$
24. $\dfrac{5x - 6y}{7} + \dfrac{3x - 4y}{14} - \dfrac{7x + 9y}{21}$

Solve the following equations

25. 17 + 3x = -3
26. 15 – 2x = 9
27. 7x – 14 = 18 – 4x
28. 9x + 4 = 3x – 9
29. 7(x + 4) = 2(x – 4)
30. 2(x + 1) = 3(x – 5) + 9

31. $\frac{2}{5}x - 1 = 4$

32. $5 - \dfrac{x}{4} = 3$

33. $\dfrac{2x + 4}{7} = 3$

34. $\dfrac{3x - 4}{5} - 7 = 0$

35. $\dfrac{3x+4}{2} = x - 2$

37. $\dfrac{6x+1}{7} - \dfrac{2x-7}{3} = 4$

36. $\dfrac{1}{4}(5x+4) = \dfrac{1}{3}(2x-1)$

38. When a number is doubled and 5 is subtracted from the result, the answer is 37. What is the number?

39. The sum of two number is 120. If the larger number is four times the smaller number, what are the two numbers?

40. The sum of four consecutive numbers is 210. Find the four numbers.

41. The sum of three consecutive odd numbers is 243. Find the three numbers.

42. When 42 is added to twice a number, the result is 346. Find the number.

43. When a number is divided by 4 and has 12 subtracted from it, the result is $\dfrac{1}{6}$ of the number. What is the number?

44. When a number is multiplied by 5, it gives the same result as when 48 is added to twice the number. Find the number.