Lesson 6

Algebra, Tame The Monster : Year 9

6.1 TEST

No need for a calculator when answering these questions

Question 1

Solve these equations:

(i) $a + 7 = 13$

(ii) $e - 7 = 15$

(iii) $5f = 20$

(iv) $\frac{h}{4} = 211$

(v) $3t + 7 = 28$

(vi) $6c - 9 = 27$

(vii) $5y - 29 = 21$

(viii) $\frac{a}{5} + 17 = 23$

(ix) $\frac{m}{7} + 3 = 7$

(x) $\frac{w}{2} - 14 = 88$

(xi) $\frac{3c}{5} = 12$

(xii) $\frac{3t}{5} = 24$

(xiii) $\frac{4v}{7} = 84$

(xiv) $k + 5034 = 7218$

(xv) $j - 3885 = 3147$

(xvi) $3d = 4512$

(xvii) $\frac{h}{11} = 101$

(xviii) $\frac{6e}{13} + 7 = 25$

(xix) $\frac{3a}{2} - 5 = 34$

(xx) $\frac{12c}{7} + 31 = 67$

Question 2

Solve the following equations.

(i) $5(u + 3) = 80$

(ii) $3(11 + 2v) = 15$

(iii) $4(23 - 5w) = 12$

(iv) $100 - 5(4 - x) = 35$

(v) $3(5t + 8) = 99$

(vi) $4(3 + 2z) + 3(z - 4) = 77$

(vii) $8 + 7(2w + 9) = 127$

(viii) $3(3x + 4) - 4(x + 5) = 22$

(ix) $7(2x + 5) + 3(8x - 2) = 48$

(x) $-(5 - 3w) + 7 = 23$

Question 3

(i) Find the value of $5x^2 + 9y$ when $x = 10$ and $y = 6$.

(ii) When a number, x, is doubled and then added to 53, the result is 81. What is the number, x ?

(iii) When a number, m, is tripled and then added to 17, the result is 38. What is the number, m ?

(iv) When a number is tripled and then 46 is subtracted from that result, the answer is the number. What is the number ?

(v) When a number is doubled and then subtracted from 93, the result is the number. What is the number ?

(vi) There are two different numbers that, when squared, are 81.
What are the two numbers ?

(vii) Give all solutions to the equation; $x^2 = 49$

(viii) Solve the equation; $w(4 - w) + w^2 = 28$.

(ix) Solve the equation; $c^2(c - 1) + c^2 = 27$

(x) Given that $x = 2$, find the value of,

$$\frac{64}{x^4} + 3$$

Question 4

Write in as simple a form as possible and without any brackets.

(i) $8 (2 + 3a)$

(ii) $b (b + 7)$

(iii) $4 c^2 (2 c^3 + 3 c^2)$

(iv) $7 \times (3d) \times (3d)$

(v) $e^3 (3 e)^2$

(vi) $5 (3 f^4)^2$

(vii) $10h (3.5g + 1.1h)$

(viii) $2h (3 g^5 - h) + 2 g^4 (7hg + 5h)$

(ix) $6 (4x^2 + 7x) - 5 (x^2 + 6x)$

(x) $8y (8 + 5y^2) - 6 (2y - 7y^3)$