STEP 1 : ADDING & SUBTRACTING WITH INDICES

Simplify:

1) $2x^2 + 7x^2 = 9x^2$

2) $3x^3 + 8x^3 = 11x^3$

3) $7a^2 + 2a^2 + b = 9a^2 + b$

4) $3b^3 + b^3 - b^2 - b^2 = 4b^3 - 2b^2$

5) $2x^2 + 3x^3 + 3x^2 + 2x^3 = 5x^3 + 5x^2$

STEP 2 : SIMPLIFY BY MULTIPLYING (ADDITION LAW)

Match the calculations to the simplified version

| $a \times a \times a$ | $a^2 \times a^5$ | $a^2 \times a \times b^3 \times b^2$ |

a^7 a^3 $a^3 b^5$

STEP 3 : SIMPLIFY BY DIVIDING (SUBTRACTION LAW)

Work out the missing values

1) $3^7 \div 3^2 = 3^{\boxed{5}}$

2) $x^8 \div x^6 = x^{\boxed{2}}$

3) $a^7 \div a^{\boxed{2}} = a^5$

4) $4a^2 \div 2a = \boxed{2}a$

5) $12x^7 \div \boxed{4}x^2 = 3x^{\boxed{5}}$

6) $50x^{\boxed{22}} \div 2x^7 = \boxed{25}x^{15}$

7) $\dfrac{\boxed{64}\, x^9}{\boxed{2}x^2} = 8x^7$

$8x$

STEP 4 : POWERS OF POWERS

1) $(2^2)^3 = 2^6$

2) $(3^2)^7 = 3^{14}$

3) $(x^2)^3 = x^6$

4) $(x^1)^7 = x^7$

5) $(x^5)^7 = x^{35}$

6) $(2x^2)^3 = 8x^6$

7) $(7x^7)^2 = 49x^{14}$

8) $(4x^8)^3 = 64x^{24}$

9) $(3x^2)^3 = 27x^6$

10) $(5x^{11})^3 = \boxed{125}\, x^{33}$