1) Let the three terms be $x, x+b$ ...

$x, x+b$ and $x+2b$.

Where; $T_1 = x$

$T_2 = x+b$

$T_3 = x+2b$

* $T_1 + T_2 + T_3 = 18$

$x + (x+b) + (x+2b) = 18$

$3x + 3b = 18, \quad x + b = 6$

$\therefore b = 6 - x \quad \text{---(i)}$

* $T_1^2 + T_2^2 + T_3^2 = 206$

$x^2 + (x+b)^2 + (x+2b)^2 = 206$

$x^2 + (x^2 + 2bx + b^2) + (x^2 + 4bx + 4b^2) = 206$

$x^2 + x^2 + 2bx + b^2 + x^2 + 4bx + 4b^2 = 206$

$3x^2 + 6bx + b^2 + x^2 + 4bx + 4b^2 = 206$

$3x^2 + 6bx + 5b^2 = 206 \quad \text{---(ii)}$

Substitute eqn (i) into eqn (ii)

$3x^2 + 6x(6-x) + 5(6-x)^2 = 206$

$3x^2 + 36x - 6x^2 + 5(36 - 12x + x^2) = 206$

$3x^2 + 36x - 6x^2 + 180 - 60x + 5x^2 = 206$

$2x^2 - 24x - 26 = 0$

$x^2 - 12x - 13 = 0$

$x^2 - 13x + x - 13 = 0$

$x(x-13) + 1(x-13) = 0$

$(x-13)(x+1) = 0$

$x - 13 = 0$ or $x + 1 = 0$

$x = 13$ or $x = -1$

Put $x = 13$ or $x = -1$ into (i)

When $x = 13$

$b = 6 - 13$

$b = -7$

When $x = -1$

$b = 6 - (-1)$

$b = 8$

Using $x = 13$ and $d = -7$
$T_1 = 13$
$T_2 = 13 - 7 = 6$
$T_3 = 13 + 2(-7) = 13 - 14 = -1$
$\therefore$ The three terms are 13, 6 and -1

2) For a geometric progression
The 3 terms be T_1, T_2 and T_3

$T_1 = a$
$T_2 = ar$
$T_3 = ar^2$
$T_1 + T_2 + T_3 = 28$
$a + ar + ar^2 = 28$ --- (i)
$T_1 \times T_2 \times T_3 = 512$
$a^3 r^3 = 512$ --- (ii)
$(ar)^3 = 512$
$(ar)^3 = 2^9$, $(ar)^3 = (2^3)^3$
$a = 8/r$ | $ar = 8$ --- (iii)
Put equ (iii) into equ (i)
$a(1 + r + r^2) = 28$
$\frac{8(1 + r + r^2)}{r} = 28$

$8 + 8r + 8r^2 = 28r$
$8r^2 + 8r - 28r + 8 = 0$
$8r^2 - 20r + 8 = 0$
$2r^2 - 5r + 2 = 0$
$2r^2 - 4r - r + 2 = 0$
$2r(r - 2) - 1(r - 2) = 0$
$(r - 2)(2r - 1) = 0$
$(r - 2)(2r - 1) = 0$
$r - 2 = 0$ or $2r - 1 = 0$
$r = 2$ or $2r = 1$
$r = 2$ or $r = 1/2$

Sub $r = 2$ or $r = 1/2$ into equ (iii)
$a = 8/r$
$\to r = 2$
$a = 8/2$, $a = 4$
$r = 1/2$
$a = 8/\tfrac{1}{2}$
$a = 16$
$\therefore$ When $r = 2$, $a = 4$.
$\therefore T_1 = 4$
$T_2 = 4 \times 2 = 8$
$T_3 = 8 \times 2 = 16$
$\therefore$ The 3 terms are 4, 8, 16