Warm-up Maths Questions for A-level Physics (algebra)

BASIC ALGEBRA

1. Simplify: $3x+5x$

2. Solve for x: $2x+7=15$

3. Factorize: x^2-9

4. Simplify: $4(x-2) + 3x$

5. Solve for x: $5(x-3)=2x+6$

6. Solve for x: $\frac{3x+2}{4} = 5$

7. Expand: $(2x-3)(x+4)$

8. Solve for x: $x^2 - 5x + 6 = 0$

9. Factorize: $2x^2 - 8x$

10. Simplify: $\frac{2x^2 - 4x}{x}$

ADVANCED ALGEBRA

11. Solve for x: $\frac{x+3}{x-2} = 2$

12. Simplify: $\frac{3x^2 - 2x + 1}{x} + 5x$

13. Solve for x: $3^{2x} = 81$

14. Solve for x: $x^2 - 4x - 12 = 0$

15. Simplify: $\frac{(x^2 - 1)(x + 2)}{x + 1}$

COMPLEX ALGEBRA

16. Solve for x: $\frac{(2x+1)}{x-2} = 3/2$

17. Solve for x: $\log_2(x+3)=4$

18. Solve for x: $x^3 - 3x^2 - 4x + 12 = 0$

19. Solve the equation: $\frac{(3x+5)}{x^2-4x-12} = \frac{2}{x-6}$

20. Simplify: $\frac{(x^2+6x+8)}{x^2+3x+2} \div \frac{(x^2-2x-8)}{x^2+5x+6}$