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

BASIC TRIGONOMETRY

1. Evaluate: $\sin(30^o)$

2. Evaluate: $\cos(60^o)$

3. Find θ: If $\sin(\theta)=0.5$ and $0^o \leq \theta \leq 90^o$

4. Find θ: If $\cos(\theta)=1/2$ and $0^o \leq \theta \leq 90^o$

5. Evaluate: $\tan(45^o)$

6. Simplify: $\sin(90^o - \theta)$

7. Solve for θ: $\cos(\theta) = \sqrt{3}/2$ and $0^o \leq \theta \leq 360^o$

8. Simplify: $2\sin(30^o) \cdot \cos(30^o)$

9. Find θ: If $\tan(\theta) = 1$ and $0^o \leq \theta \leq 360^o$

10. Evaluate: $\sin(120^o)$

11. Solve for θ: $2\sin(\theta)= 1$ and $0^o \leq \theta \leq 360^o$

12. Prove the identity: $\sin^2(\theta)+\cos^2(\theta) = 1$

13. Find x: If $\sin(x)=\cos(x)$ and $0^o \leq x \leq 90^o$

14. Solve for θ: $\cos^2(\theta)=1/4$ and $0^o \leq \theta \leq 360^o$

15. Evaluate: $\cos^{-1}(1/2)$

COMPLEX TRIGONOMETRY

16. Solve for θ: $2\sin^2(\theta)-1=0$ and $0^o \leq \theta \leq 360^o$

17. Find the general solution: $\tan(\theta)=\sqrt{3}$

18. Simplify: $\sin(2\theta) / \cos(\theta)$

19. Solve for θ: $2\cos(\theta)+1=0$ and $0^o \leq \theta \leq 360^o$

20. Find θ: $\sin(2\theta)=\cos(\theta)$ and $0^o \leq \theta \leq 360^o$