Solving Trigonometric Equations in Radians - Edexcel Past Exam Questions

1. Find all the solutions, in the interval $0 \leq x < 2\pi$, of the equation

$$2\cos^2 x + 1 = 5\sin x,$$

giving each solution in terms of π. **(6)**

Jan 07 Q6

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2. (*a*) Sketch, for $0 \leq x \leq 2\pi$, the graph of $y = \sin\left(x + \frac{\pi}{6}\right)$. **(2)**

(*b*) Write down the exact coordinates of the points where the graph meets the coordinate axes. **(3)**

(*c*) Solve, for $0 \leq x \leq 2\pi$, the equation

$$\sin\left(x + \frac{\pi}{6}\right) = 0.65,$$

giving your answers in radians to 2 decimal places. **(5)**

June 07 Q9

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3. (*a*) Solve for $0 \leq x < 360°$, giving your answers in degrees to 1 decimal place,

$$3\sin(x + 45°) = 2.$$ **(4)**

(*b*) Find, for $0 \leq x < 2\pi$, all the solutions of

$$2\sin^2 x + 2 = 7\cos x,$$

giving your answers in radians.

You must show clearly how you obtained your answers. **(6)**

June 11 Q7
