1. (a) Given that $5\sin\theta = 2\cos\theta$, find the value of $\tan\theta$.

(1)

(b) Solve, for $0 \leq x < 360°$,

$$5\sin 2x = 2\cos 2x,$$

giving your answers to 1 decimal place.

(5)
(Total 6 marks)

2. (i) Solve, for $-180° \leq \theta < 180°$,

$$(1 + \tan\theta)(5\sin\theta - 2) = 0.$$

(4)

(ii) Solve, for $0 \leq x < 360°$,

$$4\sin x = 3\tan x.$$

(6)
(Total 10 marks)

3. Solve, for $-90° < x < 90°$, giving answers to 1 decimal place,

(a) $\tan(3x + 20°) = \frac{3}{2}$,

(6)

(b) $2\sin^2 x + \cos^2 x = \frac{10}{9}$.

(4)
(Total 10 marks)

4. Find all the values of θ in the interval $0 \leq \theta < 360°$ for which

(a) $\cos(\theta - 10°) = \cos 15°$,

(3)

(b) $\tan 2\theta = 0.4$,

(5)

(c) $2\sin\theta\tan\theta = 3$.

(6)
(Total 14 marks)