

76. (a) Find all values of θ between 0° and 360° satisfying

$$6 \cos^2 \theta + \sin \theta = 4. \quad [6]$$

- (b) Find all values of x between 0° and 180° satisfying

$$\tan 3x = -1.54. \quad [3]$$

Jan 2009

77. (a) Find all values of θ between 0° and 360° satisfying

$$5 \cos^2 \theta + 2 = 3 \sin^2 \theta - 2 \cos \theta. \quad [6]$$

- (b) Find all values of x between 0° and 180° satisfying

$$\sin(2x + 12^\circ) = -0.53. \quad [3]$$

June 2009

78. (a) Find all values of θ in the range $0^\circ \leq \theta \leq 360^\circ$ satisfying

$$3 - 7 \cos \theta = 6 \sin^2 \theta. \quad [5]$$

- (b) Find all values of x in the range $0^\circ \leq x \leq 180^\circ$ satisfying

$$\tan(2x + 45^\circ) = 0.7. \quad [3]$$

- (c) Find all values of θ in the range $0^\circ \leq \theta \leq 360^\circ$ satisfying

$$4 \tan \theta \cos \theta + 1 = 0. \quad [3]$$

Jan 2010

79. (a) Find all values of θ in the range $0^\circ \leq \theta \leq 360^\circ$ satisfying

$$12 \cos^2 \theta - 5 \sin \theta = 10. \quad [6]$$

- (b) Find all values of x in the range $0^\circ \leq x \leq 180^\circ$ satisfying

$$\tan 2x = -1.6. \quad [2]$$

- (c) Find all values of ϕ in the range $0^\circ \leq \phi \leq 180^\circ$ satisfying

$$\tan \phi + 2 \sin \phi = 0. \quad [4]$$

June 2010

80. (a) Find all values of θ between 0° and 360° satisfying

$$7 \sin^2 \theta + 1 = 3 \cos^2 \theta - \sin \theta. \quad [6]$$

- (b) Find all values of x between 0° and 180° satisfying

$$\cos(2x + 25^\circ) = -0.454. \quad [3]$$

Jan 2011