Simple Trigonometric Equations

Specification: AQA 7357: E7 · Edexcel 9MA0: 5.7

HOMEWORK Consolidation

1 Solve $\sin\theta = 0.85$ for $0° \le \theta \le 360°$. Give angles to 1 d.p. unless exact.
AQA E7 · Edexcel 5.7 · L3

2 Solve $3\cos\theta + 1 = 0$ for $0° \le \theta \le 360°$. Give angles to 1 d.p. unless exact.
AQA E7 · Edexcel 5.7 · L3

3 Solve $\tan\theta = 0.4$ for $-180° \le \theta \le 180°$. Give angles to 1 d.p. unless exact.
AQA E7 · Edexcel 5.7 · L3

4 Without a calculator, solve $\sin\theta = -\frac{\sqrt{2}}{2}$ for $0° \le \theta \le 360°$. Give exact angles.
AQA E7 · Edexcel 5.7 · L3

5 Solve $5\sin\theta = 2\cos\theta$ for $0° \le \theta \le 360°$. Give angles to 1 d.p. unless exact.
AQA E7 · Edexcel 5.7 · L3

6 Solve $\cos\theta = -0.55$ for $-360° \le \theta \le 360°$. Give angles to 1 d.p. unless exact.
AQA E7 · Edexcel 5.7 · L3

7 Without a calculator, find the exact value of
(a) $\sin 240°$
(b) $\tan 135°$
AQA E1/E3 · Edexcel 5.1/5.3 · L1

8 Simplify
(a) $5 - 5\cos^2\theta$
(b) $\tan\theta\cos\theta$
AQA E5 · Edexcel 5.5 · L2

9 Use the graph of $y = \cos\theta$ to find all the values of θ in $0° \le \theta \le 720°$ for which $\cos\theta = \cos 40°$.
AQA E3 · Edexcel 5.3 · Ch9 L6

10 In triangle ABC, $AB = 7$ cm, $AC = 9$ cm and angle $ACB = 40°$. Find the two possible values of angle ABC. Give angles to 1 d.p. unless exact.
AQA E1 · Edexcel 5.1 · Ch9 L3

11 *AQA-style.*
(a) Solve $7\sin x = 3$ for $0° \le x \le 360°$, giving your answers to 1 d.p. [3 marks]
(b) Hence write down all the solutions of $7\sin x = 3$ for $-360° \le x \le 0°$. [2 marks]
AQA E7 · Edexcel 5.7 · L3 · AQA-style

12 *Edexcel-style.*
(a) Solve $5\cos x + 2 = 0$ for $-180° \le x \le 180°$, giving your answers to 1 d.p. [3 marks]
(b) Solve $\sqrt{3}\sin\theta = 3\cos\theta$ for $0° \le \theta < 360°$, explaining why you may divide by $\cos\theta$. Give exact angles. [4 marks]
AQA E7 · Edexcel 5.7 · L3 · Edexcel-style