
GCSE Mathematics

Exact Trig Values

Mark Scheme - Higher Tier | Grades 7-8

M = method mark, A = accuracy mark (dependent on the preceding M mark), B = independent mark.

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Edexcel-style questions

Q1 Grade 7 Edexcel style

Total: 1

Part	Mark scheme	Marks
(a)	$\cos 60^\circ = \frac{1}{2}$	B1

Q2 Grade 7 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	$\sin 30^\circ = \frac{1}{2}$ and $\cos 60^\circ = \frac{1}{2}$	M1
(a)	1	A1

Q3 Grade 8 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	$\sin 45^\circ = x / 8$	M1
(a)	$x = 8 \times \sin 45^\circ = 8 \times \frac{\sqrt{2}}{2}$	M1
(a)	$x = 4\sqrt{2} \text{ cm}$	A1

Q4 Grade 8 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	recognise $\sin 60^\circ = \frac{\sqrt{3}}{2}$	M1
(a)	$x = 60^\circ$	A1

Q5 Grade 8 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	$\sin 60^\circ = \frac{\sqrt{3}}{2}$ and $\tan 45^\circ = 1$	M1
(a)	$2 \times \frac{\sqrt{3}}{2} - 1 = \sqrt{3} - 1$	M1
(a)	$\sqrt{3} - 1$	A1

AQA-style questions

Q6 Grade 7 AQA style**Total: 1**

Part	Mark scheme	Marks
(a)	$\sin 45^\circ = \frac{\sqrt{2}}{2}$	B1

Q7 Grade 7 AQA style**Total: 2**

Part	Mark scheme	Marks
(a)	$\cos 30^\circ = \frac{\sqrt{3}}{2}$ and $\tan 60^\circ = \sqrt{3}$	M1
(a)	$\frac{3}{2}$	A1

Q8 Grade 8 AQA style**Total: 3**

Part	Mark scheme	Marks
(a)	$\sin 60^\circ = x / 6$	M1
(a)	$x = 6 \times \sin 60^\circ = 6 \times \frac{\sqrt{3}}{2}$	M1
(a)	$x = 3\sqrt{3} \text{ cm}$	A1

Q9 Grade 8 AQA style**Total: 2**

Part	Mark scheme	Marks
(a)	recognise $\cos 45^\circ = \frac{\sqrt{2}}{2}$	M1
(a)	$x = 45^\circ$	A1

Q10 Grade 8 AQA style**Total: 3**

Part	Mark scheme	Marks
(a)	$\cos 30^\circ = \frac{\sqrt{3}}{2}$ and $\sin 90^\circ = 1$	M1
(a)	$4 \times \frac{\sqrt{3}}{2} + 1 = 2\sqrt{3} + 1$	M1
(a)	$2\sqrt{3} + 1$	A1

OCR-style questions

Q11 Grade 7 OCR style

Total: 1

Part	Mark scheme	Marks
(a)	$\tan 60^\circ = \sqrt{3}$	B1

Q12 Grade 7 OCR style

Total: 2

Part	Mark scheme	Marks
(a)	$\sin 60^\circ = \frac{\sqrt{3}}{2}$ and $\cos 30^\circ = \frac{\sqrt{3}}{2}$	M1
(a)	$\frac{3}{4}$	A1

Q13 Grade 8 OCR style

Total: 3

Part	Mark scheme	Marks
(a)	$\tan 30^\circ = x / 4$	M1
(a)	$x = 4 \times \tan 30^\circ = 4 \times \frac{\sqrt{3}}{3}$	M1
(a)	$x = 4\frac{\sqrt{3}}{3} \text{ cm}$	A1

Q14 Grade 8 OCR style

Total: 2

Part	Mark scheme	Marks
(a)	recognise $\tan 60^\circ = \sqrt{3}$	M1
(a)	$x = 60^\circ$	A1

Q15 Grade 8 OCR style

Total: 3

Part	Mark scheme	Marks
(a)	$\sin 45^\circ = \frac{\sqrt{2}}{2}$ and $\cos 45^\circ = \frac{\sqrt{2}}{2}$	M1
(a)	$(\frac{\sqrt{2}}{2})^2 + (\frac{\sqrt{2}}{2})^2 = \frac{1}{2} + \frac{1}{2}$	M1
(a)	1	A1

Teachably-style questions

Q16 Grade 7 Teachably style

Total: 1

Part	Mark scheme	Marks
(a)	$\sin 60^\circ = \frac{\sqrt{3}}{2}$	B1

Q17 Grade 7 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	$\tan 45^\circ = 1$ and $\sin 90^\circ = 1$	M1
(a)	2	A1

Q18 Grade 8 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	$\cos 45^\circ = x / 10$	M1
(a)	$x = 10 \times \cos 45^\circ = 10 \times \frac{\sqrt{2}}{2}$	M1
(a)	$x = 5\sqrt{2}$ cm	A1

Q19 Grade 8 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	recognise $\sin 30^\circ = \frac{1}{2}$	M1
(a)	$x = 30^\circ$	A1

Q20 Grade 8 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	$\tan 60^\circ = \sqrt{3}$ and $\tan 30^\circ = \frac{\sqrt{3}}{3}$	M1
(a)	$3\sqrt{3} - 2 \times \frac{\sqrt{3}}{3} = 3\sqrt{3} - 2\frac{\sqrt{3}}{3}$	M1
(a)	$7\frac{\sqrt{3}}{3}$	A1

END OF PAPER

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