
GCSE Mathematics

Circumference & Area of Circles

Mark Scheme - Foundation | Grades 4-6

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

© Teachably. This resource may not be copied or distributed without permission.

Edexcel-style questions

Q1 Grade 4 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	$2 \times \pi \times 7$	M1
(a)	14π cm	A1

Q2 Grade 4 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	$\pi \times 6^2$	M1
(a)	36π cm ²	A1

Q3 Grade 5 Edexcel style

Total: 2

Part	Mark scheme	Marks
(a)	$20\pi = 2 \times \pi \times r$	M1
(a)	$r = 10$ cm	A1

Q4 Grade 5 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	$\text{arc} = 3.14 \times 7 = 21.98$ cm	M1
(a)	$\text{perimeter} = 21.98 + 14$	M1
(a)	35.98 cm	A1

Q5 Grade 6 Edexcel style

Total: 3

Part	Mark scheme	Marks
(a)	$\text{outer circle area} = \pi \times 8^2 = 64\pi$	M1
(a)	$\text{inner circle area} = \pi \times 5^2 = 25\pi$	M1
(a)	$\text{shaded area} = 64\pi - 25\pi = 39\pi$ cm ²	A1

AQA-style questions

Q6 Grade 4 AQA style**Total: 2**

Part	Mark scheme	Marks
(a)	$\pi \times 9$	M1
(a)	9π cm	A1

Q7 Grade 5 AQA style**Total: 3**

Part	Mark scheme	Marks
(a)	radius = $10 \div 2 = 5$ cm	M1
(a)	$\pi \times 5^2$	M1
(a)	25π cm ²	A1

Q8 Grade 5 AQA style**Total: 2**

Part	Mark scheme	Marks
(a)	$d = 37.68 \div 3.14$	M1
(a)	$d = 12$ cm	A1

Q9 Grade 5 AQA style**Total: 3**

Part	Mark scheme	Marks
(a)	arc = $\frac{1}{4} \times 2 \times 3.14 \times 8 = 12.56$ cm	M1
(a)	perimeter = $12.56 + 8 + 8$	M1
(a)	28.56 cm	A1

Q10 Grade 6 AQA style**Total: 3**

Part	Mark scheme	Marks
(a)	square area = $10^2 = 100$ cm ²	M1
(a)	circle area = $3.14 \times 5^2 = 78.5$ cm ²	M1
(a)	shaded area = $100 - 78.5 = 21.5$ cm ²	A1

OCR-style questions

Q11 Grade 4 OCR style**Total: 2**

Part	Mark scheme	Marks
(a)	$2 \times 3.14 \times 5$	M1
(a)	31.4 cm	A1

Q12 Grade 4 OCR style**Total: 2**

Part	Mark scheme	Marks
(a)	3.14×4^2	M1
(a)	50.24 cm ²	A1

Q13 Grade 5 OCR style**Total: 2**

Part	Mark scheme	Marks
(a)	$r^2 = 49$	M1
(a)	$r = 7$ cm	A1

Q14 Grade 6 OCR style**Total: 3**

Part	Mark scheme	Marks
(a)	radius = 6 cm	M1
(a)	$\frac{1}{2} \times 3.14 \times 6^2$	M1
(a)	56.52 cm ²	A1

Q15 Grade 6 OCR style**Total: 3**

Part	Mark scheme	Marks
(a)	sector area = $(120 \div 360) \times \pi \times 9^2 = 27\pi$ cm ²	M1
(a)	arc length = $(120 \div 360) \times 2 \times \pi \times 9$	M1
(a)	arc length = 6π cm	A1

Teachably-style questions

Q16 Grade 4 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	3.14×10	M1
(a)	31.4 cm	A1

Q17 Grade 5 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	radius = $6 \div 2 = 3$ cm	M1
(a)	3.14×3^2	M1
(a)	28.26 cm ²	A1

Q18 Grade 5 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	$r^2 = 78.5 \div 3.14 = 25$	M1
(a)	$r = 5$ cm	A1

Q19 Grade 6 Teachably style

Total: 2

Part	Mark scheme	Marks
(a)	$\frac{1}{4} \times 3.14 \times 10^2$	M1
(a)	78.5 cm ²	A1

Q20 Grade 6 Teachably style

Total: 3

Part	Mark scheme	Marks
(a)	circumference = $3.14 \times 70 = 219.8$ cm	M1
(a)	distance = $219.8 \times 100 = 21980$ cm	M1
(a)	219.8 m	A1

END OF PAPER

Want help from an expert maths tutor?

Book a free GCSE Maths consultation with our team at Teachably. Visit teachably.co.uk/book-call to get started.