



GCSE Foundation 17

Shape, space and measure



101 minutes



96 marks

Properties of shape

M1. $\pi \times 6^2$

M1

113.(...) or 36π

A1

[2]

M2. (a) (B and) E

B1

(A and) F

B1

(b) All 3 pairs identified

B and C D and E E and F

B1 for two identified with none incorrect

B2

(c) C and D shaded

B1

[5]

M3. $3.14(1...) \times 10.5$

M1

32.9 to 33

A1

[2]

M4. (a) 80° and 20°

B1

50° and 50°

B1

- (b) $\angle BAD = 30^\circ$ or
any angle in $\triangle BCD = 60^\circ$

B1

$$\angle ABD = 30^\circ$$

B1

Isosceles because $\angle BAD = \angle ABD$
oe

B1

[5]

- M5.** (a) False

B1

- (b) True

B1

- (c) False

B1

- (d) True

B1

[4]

- M6.** (a) A and E

Either order

B1

- (b) C and D

Either order

B1

- (c) 8

B1

cm^2

Units mark

B1

[4]

- M7.** (a) Correct sketch with sides marked
Do not accept equilateral triangles
B1
- (b) Any 2 of rectangle, parallelogram, arrowhead or kite
B1 for 1 correct
B2
- (c) The 3 cm rod and the 5 cm rod would not meet
oe eg, $3 + 5 < 9$
B1
[4]

- M8.** (a) $10x + 6y$
B1 For $10x$ or $6y$
B2
- (b) $8x + 10y$
B1 For $8x$ or $10y$
B2
[4]

- M9.** (a) 60°
B1
- (b) 120°
B1
- (c) $120^\circ + 120^\circ + 60^\circ + 60^\circ = 360^\circ$
oe B1 For $120^\circ + 60^\circ = 180^\circ$
B2
- Hence no gaps
B1dep
[5]

- M10.** (a) $65^\circ \pm 2^\circ$ B1
- (b) All angles correctly labelled
B1 4 angles correctly labelled B2
- (c) w, x, y and z are angles at a point; sum of angles at a point is 360° ;
w, x, y and z are angles in each quadrilateral
Any two of the three conditions oe B1
- [4]

- M11.** (a) Equilateral (triangle) B1
- (b) (i) Rhombus B1
- (ii) 2
Accept in words B1
- (iii) 2 diagonals drawn
-1 eeo B2
- [5]

- M12.** (a) (i) Congruent ✓
Symmetry ✗
Parallelogram ✗
Trapezium ✓
Two right angles ✓
B2 for 3 or 4 correct
B1 for 1 or 2 correct
Treat blank responses as incorrect answers B3
- (ii) (4 ×) 1.5
oe eg, $1 + 1 + 1 + 1 + \frac{1}{2} + \frac{1}{2} + \frac{1}{2} + \frac{1}{2}$ M1
- 6 A1

(b) Correct reflection

B1

(c) 2nd trapezium in third row



SC1 **both** squares only or **both** triangles only shaded
or no shading but diagonal lines shown within **both** shapes

B1

3rd trapezium in bottom row



B1

[8]

M13. (a) (i) Kite

B1

(ii) Trapezium

B1

(b) Rectangle drawn

B1

(c) Equilateral triangle drawn
2 possible sizes

B1

(d) $P = 2 \times 3 + 2 \times 5.2$
 $6 + 10.4, 2 \times 8.2$

M1

16.4

A1

(e) Method 1 Attempt to compare using equilateral triangles/rhombi

Method 2 Using formulae

Method 1 eg, 2 bottom halves equal and lines drawn

Method 2 eg, $b \times h$ for rhombus or $\frac{1}{2}b \times h$ for triangle

B1

Complete argument

Method 1 Show that both top halves are $\frac{1}{2}$ of a rhombus or are the same

Method 2 Using both formulae and triangle has double the base (or height) oe

B2 Complete hexagon on diagram and show each is $\frac{1}{3}$ of hexagon

B1

[8]

M14. (a) E

B1

(b) C

B1

(c) $180 - 115$

M1

65

A1

[4]

M15. $\frac{(180 - 126)}{2}$

M1

$x = 27$

A1

153

$126 + \text{their } x, 180 - \text{their } x$

B1 ft

[3]

M16.	(a) Draws any rhombus <i>Accuracy of 3 mm.</i> <i>Angle between sides must not be 90</i>	B1	
	(b) Rhombus <i>Not square, diamond, oblong</i>	B1 ft	[2]
M17.	Rectangle with area 12 cm ² <i>Accept lines non-ruled if intention is clear</i> <i>B1 for rectangle with perimeter of 12 cm</i>	B2	[2]
M18.	(a) Rhombus	B1	
	(b) Diagonals cross at right angles; One pair of opposite angles equal. <i>–1 eeo</i> <i>SCI if only two more lines are drawn and one is correct</i>	B2	[3]
M19.	True, false, true, false <i>–1 eeo</i>	B3	[3]
M20.	Length 8 and width 5 <i>allow 8 by 5 rectangle drawn</i> <i>or B1 rectangle with area 40</i> <i>or B1 rectangle with perimeter 26 cm</i>	B2	[2]

M21.	(a)	$(180 - 34) \div 2$	M1	
		73	A1	
	(b)	$180 - (38 + 34 \text{ their } x)$	M1	
		35		
		<i>Their 73 - 38</i>	A1	
	(c)	No, because $38 \neq 35$		
		<i>oe angles are not the same</i>		
		<i>ft their answer to y but not 38</i>	B1	
				[5]

M22.	Chord	B1	
	Circumference	B1	
	Radius	B1	
	Tangent	B1	
	in correct boxes		
			[4]

M23.	Angle of 43° drawn ($\pm 2^\circ$)		
	or line 6.5cm drawn (± 2 mm) and ruled	B1	
	Complete correct triangle drawn within the tolerance shown on the overlay	B1	
			[2]

M24.	(a)	$Q(5, 4), R(4, 0), S(0, 1)$	
		<i>B1 for 2 correct</i>	
		B2	

(b) $\frac{1}{2} \times 4 \times 1$ or 2
or length of side = 4.1cm ($\pm 1\text{mm}$)

M1

4 x (their 2) + 9 or

25 – 4 x (their 2)

or (their length)²

M1

17

M2A1 17 (counting squares)

SC2 17 with no working

SC1 15 to 19 inclusive

A1

cm²

B1

[6]

