

GCSE Maths Practice Set 2: 100 Geometry & Measures Questions

1. Calculate the area of a trapezium with parallel sides 7 cm and 10 cm, height 5 cm.

2. Find the missing angle in a triangle where two angles are 55° and 65° .
3. What is the sum of the interior angles of a heptagon?
4. Calculate the circumference of a circle with radius 6 cm.
5. Use Pythagoras' theorem to find the diagonal of a rectangle 8 cm by 15 cm.
6. Find the volume of a cylinder with radius 4 cm and height 12 cm.
7. Calculate the angle between two bearings: 045° and 110° .
8. Coordinates of points A(2,3) and B(8,7); find the midpoint.
9. Find the area of an equilateral triangle with side length 10 cm.
10. Calculate the volume of a prism with triangular cross-section area 24 cm^2 and length 10 cm.
11. Find the size of each interior angle in a regular octagon.
12. Calculate the length of the chord that subtends a 60° angle at the center of a circle with radius 10 cm.
13. Use sine rule to find side a in triangle ABC where angle B = 40° , angle C = 60° , and side b = 10 cm.
14. Find the magnitude of vector $\mathbf{v} = (3, 4)$.
15. Calculate the surface area of a cube with side length 7 cm.
16. Calculate the length of the side adjacent to a 45° angle if the opposite side is 12 cm.
17. Find the bearing from A(4, 6) to B(10, 12).
18. Prove the diagonals of a parallelogram bisect each other.

19. Find the area of a sector with angle 90° in a circle with radius 5 cm.
20. Calculate the exterior angle of a regular polygon with 12 sides.
21. Find the missing angle in a quadrilateral with angles 70° , 85° , and 95° .
22. Calculate the length of the hypotenuse in a right triangle with legs 9 cm and 12 cm.
23. Find the scalar product of vectors $a = (2, 3)$ and $b = (4, -1)$.
24. Find the distance between points $(5, 3)$ and $(1, -1)$.
25. Calculate the volume of a cone with radius 3 cm and height 9 cm.
26. Write the equation of the circle with center at $(0,0)$ and radius 7.
27. Find coordinates of the point dividing the line segment between $(2,1)$ and $(8,7)$ in ratio 2:1.
28. Calculate the angle of elevation of a tree 15 m tall viewed from 30 m away.
29. Find the equation of the reflection line that maps $(3,4)$ to $(3,-4)$.
30. Calculate the sum of the exterior angles of a pentagon.
31. Calculate the perimeter of a regular hexagon with side 14 cm.
32. Find the volume of a sphere with diameter 10 cm.
33. Calculate the sine of 60° .
34. Find the distance between the points $A(7, 2)$ and $B(4, 6)$.
35. Calculate the area of a parallelogram with base 8 cm and height 5 cm.
36. Use cosine rule to find side c when $a = 5$ cm, $b = 7$ cm, and included angle $= 60^\circ$.
37. Find the equation of a line passing through $(1, 2)$ and parallel to $y = 3x + 5$.
38. Calculate the size of one interior angle of a regular polygon with 18 sides.
39. Calculate the perimeter of a rectangle length 15 cm and width 8 cm.
40. Find the angle between two vectors $(3, 0)$ and $(0, 4)$.
41. Find the base length of a triangle with area 60 cm^2 and height 10 cm.

42. Calculate the volume of a right prism with base area 36 cm^2 and height 15 cm.
43. Determine if the triangle with sides 3 cm, 4 cm and 6 cm is right angled.
44. Find the translation vector that maps (1,2) to (4,7).
45. Find the surface area of a cylinder with radius 6 cm and height 10 cm.
46. Calculate the bearing from point A at (6, 3) to point B at (2, 8).
47. Calculate the length of a vector (7, 24).
48. Find the size of an interior angle in a regular decagon.
49. Find the perimeter of a rhombus with sides 12 cm each.
50. Find the area of a trapezium with parallel sides 8 cm, 12 cm and height 6 cm.
51. Calculate the volume of a cube with side length 11 cm.
52. Use Pythagoras theorem to find the missing side of a right angle triangle if hypotenuse = 13 cm and one side = 5 cm.
53. Find the resultant vector when vectors (2,3) and (-1, 5) are added.
54. Calculate the sum of interior angles of a polygon with 9 sides.
55. Find the exterior angle of a regular polygon with 24 sides.
56. Find the angle between two bearings: 080° and 270° .
57. Calculate the surface area of a cone with radius 5 cm and slant height 13 cm.
58. Find the perimeter of an equilateral triangle with side 9 cm.
59. Calculate the area of a sector with radius 7 cm and angle 120° .
60. Find the coordinates of the midpoint of a line segment joining (4,5) and (9,11).
61. A vector $a = (4, -3)$, find $-2a$.
62. Calculate the height of an equilateral triangle with side length 12 cm.
63. Calculate the volume of a cylinder with diameter 10 cm and height 15 cm.

64. Find the magnitude of the vector $(6, 8)$.
65. Find the length of the diagonal of a cuboid with edges 3 cm, 4 cm and 5 cm.
66. Calculate the perimeter of a trapezium with sides 7 cm, 9 cm, 10 cm and 12 cm.
67. Find the size of the missing angle in a triangle with two angles 35° and 75° .
68. Find the area of a rhombus with diagonals 14 cm and 10 cm.
69. Calculate the volume of a pyramid with base area 50 cm^2 and height 12 cm.
70. Find the bearing from north of a line tilted 30° east.
71. Find the scalar product of vectors $(5, 2)$ and $(3, -4)$.
72. Calculate the cosine of 45° .
73. Find the volume of a sphere with radius 6 cm.
74. Calculate the length of a vector $(10, 0)$.
75. Calculate the surface area of a hemisphere with radius 8 cm.
76. Find the size of each exterior angle of a regular hexagon.
77. Find the angle at the center of a circle subtended by an arc length of 5 cm on a radius 10 cm.
78. Find the volume of a cone with radius 3 cm and slant height 5 cm.
79. Find the angle between two lines with gradients 2 and -3.
80. Calculate the sum of exterior angles of any polygon.
81. Find the vector from A(3,5) to B(8,1).
82. Calculate the angle of elevation of a building 50 m tall from a point 80 m away.
83. Calculate the length of a vector $(1, \sqrt{3})$.
84. Find the area of a triangle with vertices at $(0,0)$, $(4,0)$, and $(0,3)$.
85. Calculate the total surface area of a cylinder with radius 3 cm and height 7 cm.
86. Find the exterior angle of a regular polygon with 10 sides.

87. Find the coordinates of the image of $(4, 2)$ after reflection in the y -axis.
88. Calculate the volume of a prism with cross-sectional area 50 cm^2 and length 16 cm .
89. Find the perimeter of a kite with sides 8 cm and 14 cm .
90. Find the equation of a line perpendicular to $y = 3x + 1$ passing through $(2, 5)$.
91. Find the total length of the diagonals of a regular hexagon with side length 6 cm .
92. Calculate the length of one side of a regular polygon with 10 sides and exterior angle 36° .
93. Calculate the coordinates of the centroid of triangle with vertices $(0,0)$, $(6, 0)$, and $(3, 9)$.
94. Find the volume of a cuboid with sides 5 cm , 7 cm , and 12 cm .
95. Calculate the angle between the vectors $(1, 2)$ and $(3, 6)$.
96. Find the area of a sector with radius 10 cm and angle 150° .
97. Find the magnitude of the vector $(-5, 12)$.
98. Find the sum of all interior angles of a 15 -sided polygon.
99. Find the area of a circle with diameter 18 cm .
100. Calculate the length of the side opposite a 60° angle in an equilateral triangle with side length 12 cm .